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Title: Knowledge, Skills, Attitudes Towards Spirituality and Religion and Inter-relationships with Patient Care and Psychological Well-being in Residency Training: A Systematic Review

Running head: Spirituality and Religion in Residency

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Abstract

Objectives: With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for the physician to address issues related to spirituality and religion (SR) during clinical consultations with patients. In light of the clinical need to improve SR-related training in residency, this review sought to examine the extant literature on the knowledge, skill, attitudes and practices of residents regarding SR during residency training, impact on clinical care and psychological well-being of residents, and SR-related curriculum implemented within various residency programs.

Design: A systematic review was conducted on studies examining the topic of SR within residency training up until July 2020.

Results: Overall, 44 studies were included. The majority were conducted in North America (95.5%) predominantly within Family Medicine (29.5%), Psychiatry (29.5%) and Internal Medicine (25%) residency programs. While residents held positive attitudes about the role of SR and impact on patient care (such as better therapeutic relationship, treatment adherence, coping with illness), they often lacked the knowledge and skills to address these issues. Better spiritual well-being of residents was associated with greater sense of work accomplishment, overall self-rated health, decreased burnout, and depressive symptoms. SR-related curricula varied from standalone workshops to continuous modules across the training years.

Conclusions: These findings suggest a need to better integrate appropriate SR-related education within residency training. Better engagement of the residents through different pedagogical strategies with supervision, feedback, reflective practice and ongoing faculty and peer support

can enhance learning about SR in clinical care. Future studies should identify barriers to SR-related training and evaluate the outcomes of these SR-related curriculum including how they impact the well-being of patients and residents over time.

(271 words)

Keywords: Spirituality; Religion; Residency; Medical Education; Curriculum

Strengths and limitations of this study:

- There is a paucity of studies that examines spirituality and religion (SR) in the context of residency training
- This review was conducted to examine SR-related attitudes in residents, how it translates to clinical practice, as well as the adequacy of SR training in residency, with findings that would be generalisable to all relevant training programs
- There was a lack of cultural diversity in the studies included in the review, with most originating in the West.
- There was inadequate evaluation of the barriers and clinical outcomes concerning SR-related training in residency both in the short and long term.

INTRODUCTION

The distinct boundary between medicine and religion has been apparent since the advent of "reason-oriented scientific thinking", which is related in part to the notion that rational thinking in the sciences is incompatible with faith based reasoning in spirituality and religion (abbreviated as SR).[1, 2] Spirituality has been defined as the "dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationship to self, family, others, community, society, nature, and the significant or sacred.[3] Spirituality is expressed through beliefs, values, traditions, and practices".[3] Religion is seen as a specialised category of spirituality reflected by the institutionalized expression of shared beliefs, values, experiences, doctrines, traditions, and faith by a community of like believers, and usually involving a ritual.[4] In an effort to establish themselves as distinct scientific undertakings, it was necessary for disciplines such as psychiatry and behavioral sciences to distance themselves from religion.[5] Sigmund Freud, the founder of psychoanalysis described spiritual experiences as a "universal obsessional neurosis", a form of "pathological thinking in need of modification".[2, 6] However, since the 1980s, there has been some literature to support the positive influences of SR on the physical and psychological well-being of individuals.[7, 8] With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for physicians to address issues related to SR during clinical consultations with patients.[3, 9, 10] In palliative and oncology specialties, some have advocated an expansion of the "biopsychosocial" framework in the formulation of clinical care for each patient to that of a more wholistic "biopsychosocial-spiritual" model.[11-13] However, the incorporation of SR into residency training has not necessarily caught up with this clinical need;

and at present, teaching in SR has not been consistently and appropriately integrated into the training curriculum.[14, 15]

Based on extant literature, the majority of patients wanted physicians to be aware of their SR and appropriately address issues related to SR.[16-20] However, physicians seldom incorporated discussion of these issues into their practice.[21-23] One of the most commonly cited barriers to discussing SR by physicians is lack of training.[21, 22, 24] A previous review amongst practising physicians found that prior training on SR related issues was the strongest predictor for providing clinical care which incorporates considerations of SR in patients.[21] Thus, there is a need to examine the prevailing knowledge, skills and attitudes regarding SR amongst residents in training as well as appropriate SR-related curriculum that have been incorporated within residency training.

In light of the clinical need to improve SR-related training in residency, we sought to review the extant literature on the knowledge, skill, attitudes and practices of residents regarding SR in clinical training, personal beliefs regarding SR and inter-relationship with clinical practice and psychological well-being of residents, SR-related curriculum implemented in various residency programs, as well as barriers to incorporating SR in residency training.

MATERIALS AND METHODS

We searched the PubMed/Medline database for relevant studies that examined issues relevant to SR within residency training up till July 2020. Keywords for the literature search included: [(Spirituality or Religion) and Residency], [Spirituality-MESH and (Internship and Residency-MESH)], [Religion-MESH and (Internship and Residency-MESH)]. The search was limited to articles in the English language only. We screened the abstracts of identified reports to ascertain whether they met the inclusion criteria, then reviewed full reports of promising studies. For each included study we extracted variables including the characteristics of subjects, the type of residency program and the salient findings. The preceding data was organized within digitalized spread sheets and then summarized into a table to help facilitate critical assessments and for independent consideration by readers. The preferred reporting items for systematic reviews (PRISMA) flowchart for this review is shown in Fig.1.[25] Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

[Figure 1 near here]

RESULTS

Table 1 summarises the main findings from the 44 studies included in this review. It includes information about the type of residency program; the knowledge, skills, attitudes and practices regarding SR within residents (Theme 1); personal beliefs regarding SR and inter-relationship with clinical practice and psychological well-being in residents (Theme 2), SR related curriculum and evaluation (Theme 3); and other themes such as prior training in SR and barriers to incorporation of SR (Others).

The majority of the papers were conducted in the USA (39/44, 88.6%), and three were from Canada, one from Denmark, and one from South Africa. Of the 44 papers, 16 (36.4%) reported data related to Theme 1, 24 (54.5%) reported data related to Theme 2, 28 (63.6%) contained data related to Theme 3, and 11 (25%) had data related to other themes. In terms of specialties included, the most frequent were Family Medicine (29.5%), Psychiatric (29.5%), and Internal Medicine (25%) residency programs.

Theme 1: Knowledge/skills, attitudes and practices regarding SR within residents

Knowledge and skills

The majority of residents lacked knowledge on the SR-related concerns of patients,[26] the role of clergy/clinical chaplains[26-29] and the availability of spiritual assessment tools.[27, 30] When asked, residents were not satisfied with their current knowledge and skills regarding spirituality, [31] with approximately 50% of residents feeling inadequately trained to address the SR-related issues of patients.[4, 32] In addition, residents varied widely in terms of the level of

comfort and self-reported competency in addressing SR-related care issues. For example, some studies noted low self-reported competency of residents in taking a spiritual history,[5, 26, 28, 31, 33] formulating an action plan, and reflecting upon one's own existential/spiritual values brought into the consultation.[33] However, other studies found that residents were comfortable when it came to discussing SR issues with their patients[30, 34, 35] and incorporating SR considerations into a management plan.[34]

Attitudes

Most psychiatry residents held positive attitudes towards the importance of addressing SR within psychiatric care.[5, 27, 36] The majority of residents agreed that a patient's beliefs in SR is an important component of compassionate care,[5, 27, 30, 32] and can affect the health status of patients.[5, 26, 28, 32, 34] Most residents believed that the beliefs of patients regarding SR are important considerations during formulation of treatment plans, especially in conditions such as depression, addictions, complicated grief and end of life care.[5, 32, 33] Residents agreed that an understanding of SR-related issues can improve the adherence and success of a treatment plan,[4, 32, 34] and more than 80% agreed in some studies that a patient's beliefs regarding SR can help patients cope better with their illness.[27, 32, 34] Residents also believed that a physician's own spiritual or religious beliefs can in turn affect patient care[5, 26, 28, 32, 33] and that the discussion of SR-related issues can further strengthen the therapeutic relationship.[4, 32, 37]

There was some uncertainty about how the topic of SR should be broached during clinical encounters. Although many residents felt it was appropriate to discuss spiritual or religious concerns with patients,[26, 28, 32, 34, 38, 39] others felt that topics related to SR were too

personal to ask, or had ethical concerns about raising such a topic during clinical encounter for fear of influencing the beliefs of patients regarding SR.[32, 34] Most residents agreed that self-disclosure of one's own beliefs about SR without permission of the patients was inappropriate.[32, 35, 40] In addition, there was uncertainty regarding who should initiate discussion about issues related to SR,[4, 5, 37] how routinely it should be asked,[4, 5, 30] and under what circumstances.[30, 37, 41] When illness was serious or near the end of life, 70-90% of residents surveyed believed it was appropriate to ask, especially within Family Medicine residents.[37, 41]

In terms of praying with patients, there were inconsistent findings. While two pediatric studies found that a relatively high proportion of residents (>60%) believed that it was appropriate to pray with a patient,[4, 37] other studies reported reservations within the residents.[32, 34, 35, 40-42]

Residents in several studies agreed that chaplains and clergy were valuable and integral to patient care,[4, 5, 26, 29] but the coordination between the chaplains and treatment team in managing discussion about SR-related issues needs to be further examined.[4]

Practice

In terms of practice,[4] conducted a study on pediatric faculty and residents and found that while few residents routinely inquired about SR-related beliefs, this figure increased to 72% in the case of a health crisis or life-threatening illness.

In terms of the frequency of clinical encounters, around 70% of residents reported 'rarely if ever' being asked by a patient or family to discuss SR-related issues or pray.[4] An earlier study[35] found that 25% of psychiatry residents reported meeting patients with issues related to SR at least once a week, 30% monthly, and 44.5% rarely in their experience. Less than 15% of these residents reported discussing their own religious beliefs with patients at least once a month.[35] Another study of Internal Medicine residents found that 85% reported making at least one chaplain referral in the last month during inpatient service.[30] Those who were more likely to engage in routine inquiry about SR issues were residents who did not expect negative patient reactions, believed strongly that addressing SR-related concerns was relevant to treatment outcomes, and felt more capable with inquiring about SR-related issues.[4]

Theme 2: Personal beliefs related to SR within the residents

Most residents had some religious preferences,[26, 37] and at least half would describe themselves as "spiritual", "religious" or both.[27, 32, 34, 43] In one study, more than 70% believed in God, reported that religion is important in their lives, and believe religion can help to manage their personal problems.[35]

Residents scored moderately high on a spiritual well-being scale[29, 39, 44] and religiosity scales.[29, 44] Conversely, other studies showed that the majority of residents did not attend religious services more than a few times a year and less than 30% agreed that they carried their religious beliefs into their daily life.[26, 35, 45] The frequency of prayer varied across different studies.[35, 40, 45]

Personal religiosity and self-rated spirituality correlated positively with residents' willingness to discuss issues related to SR with patients,[37-39, 41, 46] collaborate with the clergy,[37, 46] and their perceived importance of SR in patient care.[37, 46] Residents that used positive religious coping in their own lives were significantly more likely to initiate SR-related inquiry with their patients.[41] In a pediatric study, residents with higher religiosity scores received better perceived communication scores from adolescent patients.[45]

In terms of correlations with the psychological well-being of residents, residents with higher total scores on the Hatch Spiritual Involvement and Beliefs Scale (SIBS) had a greater sense of accomplishment in their work.[43, 47] The humility/personal application domain of the SIBS, which relates to the theme of relational quality, was negatively correlated with burnout.[47] Of note, the External Practices domain of the SIBS scale (e.g. church going) was not significantly associated with burnout.[43, 47] Poorer spiritual well-being was also associated with lower self-rated overall health.[44] In addition, poorer spiritual well-being, religious coping and greater spiritual support seeking was associated with depressive symptoms.[48] Some residents related their beliefs regarding SR with a sense of mission or calling in their practice,[49] and in one study almost half of the respondents reported that their religious beliefs influenced their choice of medicine as a career.[35]

Theme 3: SR related curriculum and evaluation within residency training

Several papers surveyed program directors on the inclusion of SR-related curriculum in training[14, 15, 50, 51] and described the development of core competencies or evaluation tools for SR-related curriculum in residency training.[52-54]

In terms of the presence of SR-related curriculum, there was wide variation in terms of the incorporation of specific teaching on SR within residency training programs. Sansone's 1990 nationwide survey of US psychiatry programs reported that only 12% of programs had any teaching on SR in residency.[14] In Canada, only four of 14 programs that responded had mandatory academic lectures that provided between 1-4 hours of teaching.[51] For Family Medicine residency programs in the US, a previous study found that 31% of the programs had a specific curriculum, averaging 6 hours long.[15] In comparison, another study examining Palliative Medicine residency programs in the US showed that 12 out of 14 programs had incorporated separate teaching on SR in their curriculum although few had robust educational and evaluation methods in place.[50]

The nature of SR related curriculum included one-off workshops,[28, 33, 46] continual modules over months,[55, 56] and curriculums spanning across the years of residency. The latter was seen in Psychiatry,[5, 57, 58] Family Medicine,[27] and Internal Medicine[26] residency programs. Most studies used simple pre/post surveys for evaluation, with very few interventions incorporating frequency of SR inquiry,[36] patient feedback and long-term effects of curriculum[27] into evaluation outcomes.

In terms of the pedagogical methods, common formats included lectures,[26, 58] small group discussions,[29] and case presentations/conferences.[5, 58] Several studies described an inter-professional approach that integrated the teaching of SR within chaplain and clinical rounds.[27, 59] Others methods included the use of reflective writing,[60] OSCE,[61] theatre improvisation and role play[33] to teach SR within resident training.

Other themes (prior training, barriers related to addressing SR in practice)

Amongst several relevant studies, more than 40% of the residents had received prior teaching regarding SR-related issues in medical school.[26, 38, 39, 62] Prior training was associated with greater self-reported competency,[35] more positive attitudes towards SR,[35, 39] and increased likelihood to engage in routine inquiry about SR-related areas during patient encounters.[4]

There were several barriers noted towards addressing SR-related concerns during clinical encounters. The most common barrier was insufficient time during clinical encounters.[4, 27, 30, 32, 34] A longitudinal study found that while skill-related barriers to discussing SR issues decreased with time and training, structural barriers such as time remained.[27] Other commonly mentioned barriers included concern about offending patients, insufficient training/knowledge, general discomfort and disapproval by peers.[4, 27, 30, 32, 34] From a curriculum planning point of view, the reported barriers for incorporating SR training into curriculum included finding adequate timeslots within training curriculum, and the lack of trained personnel.[15, 62]

DISCUSSION

Our review found that residents in training recognized the importance of addressing SR-related concerns in patient care,[26, 28, 32, 34] and acknowledged that it can strengthen the therapeutic relationship[4 ,32 ,37] and impact positively on treatment adherence and clinical outcomes.[4, 32, 34] However, in practice, SR-related issues were infrequently addressed.[4] This can be attributed to several factors. Firstly, there is lack of knowledge and training about what to ask regarding SR as was reported in several studies.[4, 26, 31, 32] Secondly, there is personal discomfort for some residents which may be related to a sense of inadequacy in addressing SR-related issues, concerns about negative responses of patients or ethical concerns about raising such a topic during clinical encounters.[32, 34] Thirdly, pressure of time during clinical encounters may not allow this area to be addressed.[32, 34] Fourthly, the frequency of inquiry seemed to be dependent on clinical context. For example, residents indicated that they were more likely to ask about SR-related issues during end-of-life situations.[4, 5, 37] This could be related to patients themselves initiating the topic or residents believing that discussion about SR is more appropriate during end-of-life settings. Residents scored moderately high on a spiritual well-being scale[29, 44] with more than half considering themselves to be either spiritual or religious.[32] Increased spiritual well-being was associated with better self-rated health, less burnout and less depressive symptoms.[43, 44, 47, 48] These findings were consistent with findings amongst other populations. A study of medical students reported significant inverse correlations between measures of spirituality and measures of psychological distress/burnout.[63] Similar associations have been found among physicians in oncology and palliative medicine.[64, 65] In turn, residents who had stronger personal beliefs regarding SR

were more willing to discuss SR-related areas with their patients[37-39, 41, 46] and perceived that addressing such concerns had a positive impact on patient care[37, 46] Those who used positive religious coping mechanisms were also significantly more likely to pray with patients and ask about their religious beliefs.[41] This is consistent with studies which found that physicians with higher religiosity were more likely to discuss SR-related issues with patients, believe that addressing SR-related concerns strongly influenced treatment outcomes; and consider the influence of SR in positive rather than negative ways in their clinical practice.[66, 67]

In terms of curriculum, pedagogical modules related to SR were more commonly found in palliative medicine residency programs[50] than other residency programs. This could reflect the increased severity of illness and end of life scenarios seen in palliative medicine,[68] greater willingness and acceptance of patients and clinicians to address topics related to SR,[69] or even the desire of residents to optimize the care and management of patients during the course of their illness. Interventions described were largely one-off workshops with only a few incorporated within the existing training curriculum. The most common pedagogical methods included didactics, small group discussions and case presentations.[27, 58] Other pedagogical methods that can be used to better engage and equip the residents include involvement of an inter-professional team members such as chaplains if available,[59] discussion groups with patients,[70] written reflection,[60] and role play.[33] Thus far there have been few formal evaluations[27, 36] of the effectiveness of such SR-related curriculum in engendering better patient evaluation, care, and support through patient and resident feedback channels.

There are several practical implications from this review. First, there is a need to facilitate the appropriate inclusion of SR-related topics into the residency curriculum and clinical assessment so that there is congruence between teaching and clinical practice. Frameworks such as the FICA (Faith, Importance, Community, Address)[71] or HOPE (Hopes, Organised religion, Personal spirituality and practices, Effects on medical care)[72] can be introduced early into training to help residents incorporate SR discussion into their clinical practice. With early training, residents would be better prepared to deal with such topics competently and with sensitivity regarding the diverse beliefs of patients during clinical encounters. Second, to engage the residents in training through different pedagogical strategies in view of the constraints of time. This could include blended and hybrid learning, a combination of didactics and case discussions to expand exposure, involvement of chaplains, and discussion groups with patients to highlight relevance of addressing SR issues in training. In addition, role play within the group can help residents in their practice of SR-related acquired skills and tools before actual patient encounters. Third, to reflect on patient encounters involving SR and consider the challenges faced and possible improvements to the approaches used. Fourth, to support resident efforts when they encounter challenges through faculty supervision, feedback and peer support.

This study has several limitations. Firstly, the papers reviewed are limited to the West save for one study done in South Africa. It would be important to encourage studies from different parts of the world as it is likely that different cultures and belief systems would influence approaches toward addressing SR-related issues in residency training and practice. Second, few studies reported on quantitative measures related to SR in training and clinical care such as the frequency of resident-initiated and patient initiated inquiries related to SR, or SR-related discussions across different clinical circumstances. Third, few studies evaluated the long-term

outcomes of teaching SR-related issues during resident training. Thus, future studies may want to examine areas such as patient well-being, resident well-being, perceived learner satisfaction and long-term outcomes following interventions to incorporate SR in residency training.

CONCLUSION

In conclusion, we found that while residents acknowledged the benefits of addressing SR-related issues during clinical encounters, they varied in terms of their level of comfort in addressing these areas. Possible contributory factors included lack of knowledge, constraints of time, personal beliefs about SR and prior training. Several practical considerations were suggested such as the intentional and appropriate inclusion and integration of SR related topics into the training curriculum and better engagement of learners through varied pedagogical strategies.

Table 1: Summary of the main findings related to Spirituality and Religion (SR) in relevant studies within Residency Training

Author/ year	Participants and residency program	Theme 1: Knowledge/skills, attitudes and practices regarding RS	Theme 2: Personal beliefs regarding SR in residents	Theme 3: Curriculum and evaluation	Other themes (barriers/prior training)
Piscitello & Martin 2019	123 IM residents PGY 1-4, University of Chicago, USA	Knowledge: • 57% had knowledge about the role of chaplains • 4% had knowledge about type of training chaplains receive • 33% lacked knowledge in spiritual concerns at the end of life • 24% lacked knowledge on religious rituals requested • 15% felt competent to take a spiritual history Attitudes: • 96% agree that a patient's SR can affect their health • 70% believe a physician's SR beliefs can affect patient care • 76% thought it is appropriate to discuss SR concerns with patients • 94% believe chaplains are valuable in patient care Practices: • 53% have discussed SR concerns with patients • 42% reported having prayed with a patient during residency training	• 22% Roman Catholic • 13% Judaism • 11% Protestant • 9% Hinduism • 4% Islam • 69% had a religious preference • 62% attended religious services at least once a year • 18% agreed with the statement "I try hard to carry my religious beliefs into all other dealings in life"	3-part series over 1 year to increase resident knowledge on how SR and medicine affect patient health, increase the understanding of the role of chaplains and increase resident comfort in spiritual history taking Included lectures, discussion groups, and a panel of experts Outcome: • Knowledge of chaplains increased • No other changes in SR knowledge, attitudes or skills	Prior education: • 40% received education in SR in medical school • 7% in residency

Kelley et al. 2018	51 Psychiatry residents at Western Psychiatric Institute, USA	–	• 37.8% Christian • 18.5% other religions • 13.5% atheist • 16.2% agnostic Personal religiosity positively correlated with: • Willingness to discuss SR • Willingness to collaborate with clergy • Perceived impact of religion	4-hour collaborative workshop involving community based clergy designed to: • Improve attitudes toward the role of religion in mental health for African American Christians, • Increase comfort in talking with patients about spirituality • Increase willingness to involve clergy in team approach. It included a didactic session, small group case-based discussions and a panel discussion Outcome: • More comfort in discussions with patients about SR • Greater willingness to collaborate with clergy • Greater importance of religion to mental health	–
Hvidt et al. 2018	14 practicing General Practitioners and 5 residents in training from one Danish region, Southern Denmark	–	• 47% are 'believers'	8 hour vocational training/CME course on existential communication (cancer patients) Three parts: theoretical input, group/self-reflection, communication training (theatre improvisation with case studies) Outcome: • Participants showed increased self-efficacy in SR communication, working on	–

				their own barriers and self-reflection of existential/spiritual values brought into consultation • Increased perceived importance on communication about SR concerns • 89% felt improvements in communicating existential issues • Qualitative data showed beneficial self-reflective processes	
Rosendale and Josephson 2017	Needs assessment: 47 (36%) program directors of academic Neurology programs nationally, USA	–	–	Needs assessment: 65% of neurology programs did not have formal diversity curriculum training Integrated diversity curriculum pilot: Six 1 hour weekly lectures covering ethnicity, language, religion, sexual orientation, gender identity/expression, SES Included lectures, religious leader panel discussion, grand rounds Outcome: • Most residents felt strongly that formal training in cultural responsiveness was important	Barriers to formal training: • Time • Lack of expertise • Lack of educational materials Prior training: • 17% no formal training • 54% some training in college • 54% monthly or more frequent training in medical school
Gattari et al. 2018	22 third year medical students, 12 Psychiatry residents, 7	Knowledge • 75.6% felt comfortable asking about SR issues • 82.9% felt comfortable addressing patients' SR	• 66.7% religious, spiritual, or both	–	Barriers to discussing SR: • 63.4% insufficient time • 51.2% concerned

	attending psychiatrists, Wayne State University School of Medicine, USA	problems or needs • 97.6% felt comfortable considering patients' cultural community and practices when formulating a treatment plan Attitudes: • 87.8% agreed that it was important to inquire about SR • 92.7% felt that considering SR of patients can improve compliance and success to the treatment plan • 87.8% felt that SR helps their patients cope with distress • 26.8% felt religion was too personal to ask • 31.7% had ethical concerns about discussing SR • 29.3% would pray with patients • 97.6% would consider SR when making management plan			about offending patients • 56.1% insufficient training/knowledge • 46.3% general discomfort • 12.1% disapproval by peers Prior training: • 22.7% for medical students • 41.7% for residents
Woods and Hensel, 2018	46 residents in Paediatrics rotating through the adolescent clinic from August 2013 to August 2014, USA 364 patients seen by residents in adolescent clinics	–	• 32% Christian-catholic • 26.1% no religious affiliation • 23.9% Christianity (protestant) Spirituality • Majority of residents did not feel any of the terms on the spirituality questionnaire applied completely to their body Religiosity • 36.9% attend religious services a few times a year 26.1% at least once a month,	–	–

			19.6% never • 58.7% rarely or never prayed • 60.8% disagreed that they tried hard to carry religion into their daily life Residents with higher religiosity received better perceived communication scores from patients. Residents that were protestant or 'other' received better communication scores than those that were Catholic		
Vicini et al. 2017	Family Medicine residents from Tufts University SOM, USA	–	Themes of reflective writing: • Longings and desires • Self-doubt • Helplessness • Existential questions	15 minutes of reflective writing three times a week as part of medical residency curriculum to help residents explore their inner lives. Residents wrote reflections about their experiences with patients Outcome: • Residents saw value in self-reflection • Expressed desire for group discussions to normalize their thoughts and feelings with their peers	–
McGovern et al. 2017	12 Psychiatry residents from Texas Tech University of	Knowledge: • 38.4% agreed, 30.8% disagreed, 30.8% not sure that they were able to take a spiritual history	• 33% Christians • 33% Hindus • 25% Muslims • 8% agnostic	Spirituality training was incorporated into the existing 3 year curriculum.	–

	Health Sciences Center, USA	• 92.8% agreed that training enhances one's skills to communicate about spiritual matters • 78.6% agreed that knowledge of spirituality enhanced clinical competency Attitudes: • 85.7% believed that psychiatry should not distance itself from SR • 71.4% believed that appreciating their own spirituality would be helpful in patient care • Mixed response if spirituality should be assessed on a regular basis • 42.8% agreed that discussion of SR issues should be initiated by patients • Large majority of residents agreed that managing spiritual concerns are important in the treatment of suffering, depression, end of life care, addictions, guilt, and complicated grief • 85.7% agreed that awareness of patient spirituality facilitates compassionate and competent care • 71.4% agree that assessment of patient's spiritual needs improves treatment planning and outcomes	.	Included didactic experiences in seminars, clinical and other training experiences (including spirituality dinners). Evaluation was done using the SARPP survey to measure spirituality awareness. Outcome: • 46% report increased awareness and integration of spirituality into their clinical practice • 69.2% considered the curriculum to be meaningful • 92.3% feel that it has improved their clinical expertise with issues of spirituality	

Leong et al. 2016	14 Palliative Medicine clinicians including attendings, fellows, residents and nurse practitioners, USA	–	–	1 hour educational intervention with a Muslim chaplain with Q&A Outcome: • Knowledge of clinically relevant Islamic teachings regarding end-of-life care improved significantly after intervention • Intervention was well-liked and clinically useful	–
Anandarajah et al. 2016	26 FM residents, New England, USA 13 received intervention, 13 did not receive any curriculum 49 transcripts analyzed over the 8 year study	Qualitative interviews done 3 times over 10 years for intervention group, 1 time for control. Knowledge • Clinical approach to spiritual care (SC) varied from common sense interviewing techniques in untrained groups to nuanced approaches in the intervention physicians • PGY3s in the intervention group expressed more confidence in their SC skills, with greater uniformity of skill self-assessment. Most had approaches to initiating conversations, knowledge of chaplain roles and spiritual self-care strategies for coping. Attitudes: • Physicians held positive attitudes toward spirituality in patient care	• Control and Intervention group had similar religiosity and religious affiliations • Majority Christian • Majority either spiritual or religious • For untrained groups, self-assessment of knowledge and skills depended on the importance of spirituality in their own lives Intervention physicians noted positive effects of self-reflection in a safe environment coupled with compassion shown to them through this curriculum Physicians appreciated opportunity to talk one on one about their beliefs and values related to SC	24 hours of SC curriculum over 3 years, with pedagogical methods including didactic sessions, small groups, direct clinical care, and experiential and reflection activities. Outcome: • Intervention group had progressive improvements in clinical approach, knowledge, SC skills and spiritual self-care strategies • Decrease in skill-related barriers • Residents valued compassion shown to them, opportunities for spiritual self-care/reflection	Barriers cited: • Skill-related • Structural (Lack of time) Prior training: • Most had no prior SC coursework

		• All pre-intervention endorsed the role of spirituality in patient care as "one of the biggest ways people deal with their illness". • All endorsed a relationship between spirituality and compassionate patient care. Practices: Majority described rich patient SC experiences. Particularly relating to end-of-life care, cultural diversity, and compassionate care, acute crisis.			
Hemming et al. 2016a	34 IM residents, John Hopkins Bayview Medical Centre, USA	Knowledge: • 21% of residents had knowledge of a spiritual assessment tool • 9% had used such a tool at least once Attitudes: • 82% felt that addressing a patient's spirituality was an important part of patient care Practice • 85% (29 of 34) of residents reported having made at least 1 chaplain referral during their most recent month of inpatient service	–	Interprofessional curriculum to address gaps in spiritual knowledge and skills. Integration of a chaplain intern with 1 inpatient medical team during a 4 week rotation. Outcome: • Rotations with chaplains received significantly higher ratings in residents' understanding of patients values and level of collaboration with chaplains • Needs assessment repeated the following year showed 36% absolute increase in those who reported being very comfortable in discussing a spiritual concern with a patient	Barriers cited: • Lack of time • Uncertainty in approaching topic • Language differences

Hemming et al. 2016b	10 IM attending physicians, 10 chaplain interns, and 10 residents, John Hopkins Bayview Medical Centre, USA	–	–	An interprofessional curriculum for internal medicine residents and chaplain interns with the aim to improve medical resident's ability to provide care that is sensitive to spiritual needs and equip chaplain trainees to work with physician. Chaplain interns are paired with the medicine team 1 day per week for 4 consecutive weeks on the Aliki service. Focus groups conducted for physicians, interns, residents on interprofessional curriculum. Outcome: Increased awareness of effective communication skills	–
Doolittle and Windish 2015	44 IM medicine interns, 19 primary care, 4 IM residents, Yale University, USA	–	• 48.5% considered themselves to be spiritual • 1.5% considered themselves to be religious Correlation between spirituality (SIBS) and burnout domains • Those with higher total SIBS score as well as higher scores on the internal/fluid and existential/meditative domains of the instrument had a greater sense of accomplishment in their work • SIBS score had no association with the prevalence of emotional exhaustion or	–	–

			depersonalization on the MBI • External Ritual domain (church going etc.) was not significantly correlated with burnout.		
Awaad et al. 2015	19 3rd and 4th year Psychiatry residents, Stanford university, USA	Attitudes: • Attitudes towards spirituality in psychiatry was initially positive • No significant change over time	–	A Process-Oriented, clinically focused approach to Teaching Religion and Spirituality in Psychiatry Residency Training Six 50-minute sessions. Brief didactics and case discussions facilitated by staff faculty. A panel of chaplains was invited for one session. Outcomes: • Significant improvement in competency of taking a spiritual history and understanding of DSM-IV diagnosis of SR problems • Significant improvement in incorporating spirituality in clinical practice	–
Roseman 2014	16 residents of various disciplines, Broward Health Medical Centre, University Hospital Florida University, USA	–	-	3 months of weekly meetings to increase awareness of spiritual and compassionate care in the medical encounter. Sessions included reflection and open discussion (“safe space”) about challenging patient encounters with guidance and tools for the integration of spirituality and compassionate medicine into daily patient encounters.	–

				Outcomes: • The ability to share in a "safe" space allowed spiritual relationships to flourish • Participants indicated that the opportunity to talk about patient cases and share "real feelings" in small group settings was most meaningful	
Ford et al. 2014	181 IM trainees and 541 patients with advanced medical illness under their care, USA	Knowledge: • Physician trainees rated their communication competence in discussing SR and existential issues lower than their competency in discussing medical decisions • Trainees' self-assessments of their skills in SR communication was positively associated with their patients' reports of the occurrence and ratings of SR communication	–	–	–
Ledford et al. 2014	28 staff and residents in FM residency, Fort Belvoir Community Hospital, Virginia, USA	–	• 35.7% Protestant • 32.1% Catholic • 10.7% agnostic • 10.7% atheist	A teaching OSCE on SR followed by personal written reflection, dyadic guided reflection, and group reflection across three different time points where learners discussed the sensitizing practice, objectives and lessons learned. Outcome: • Residents showed progression along the stages of change with the target behavior being the physician's willingness to	–

				engage in mindful practice with patients who want to discuss SR	
Doolittle et al. 2013	108 IM residents, Yale university, USA	–	• 40% considered themselves spiritual • 7% considered themselves religious • Spiritual well-being was positively correlated with personal accomplishment • Humility/personal application domain negatively associated with emotional exhaustion and depersonalization	–	–
Kattan and Talwar 2013	45 Psychiatry residents, McGill University, Canada	Knowledge: • 84.4% felt comfortable asking patients about their spirituality Attitudes • 91.1% agreed it is appropriate to inquire about spirituality • 72.7% agreed that is important to address patients' spiritual problems or needs • 95.6% agreed that spiritual beliefs can help some patients cope with stressors • 80% agreed that that spiritual beliefs can contribute to or compound mental illness • 84.4% agreed that considering a patients' spirituality can improve treatment compliance and success • Uncertainty regarding the	• 37% Christian • 25.9% Jewish • 7.4% atheist • 3.7% Muslim • 25.9% others/unknown/none • 37.5% neither spiritual nor religious • 20% both spiritual and religious • 37% spiritual only • 5% religious only	–	Barriers cited: • 80% insufficient time • 48.9% fear of offending patients • 48.9% insufficient knowledge/training • 31.1% general discomfort • 22.2% feared disapproval from other psychiatrists Prior training: • 38.6% had received training on spirituality • 81.3% of those who did found it beneficial • Qualitative data

		acceptability of self-disclosure and prayer • 24.4% had concerns regarding ethical implications of discussing spiritual issues with patients • 48.9% agreed that asking about spirituality can be too personal or offensive Practice • 71.1% agreed that spirituality is often cited by patients as related to their ability to cope with psychological distress • 75.6% agreed that spiritual issues are often brought up by patients who are dying			reported that prior training "increased awareness" of the relationship between spirituality and mental health. • Prior training helped increase their skills on sensitive questioning, "comfort approaching the topic" and in the "initiative to question" patients on it.
van Rensburg et al. 2013	13 Psychiatrists from University of Witwatersrand, South Africa	–	–	Exploring, analyzing, and describing the views and experience of local academic psychiatrists on the topic of the role of spirituality in South Africa psychiatric practice and training. Training of spirituality in psychiatry emerged as one of the 6 main themes from the interview • All participants agreed that spirituality must be included in undergraduate medical and specialist psychiatric training • Suggested a mentorship vs. apprenticeship model • Core competencies are	–

				described	
Campbell et al. 2012	Psychiatry residents, The University of South Carolina, USA	–	–	Vertical curriculum on SR/ integrated into the general- and child-psychiatry training programs over the 12 month academic year. It included residents as teachers, didactics, case-conferences, and an interdisciplinary workshop. 80 quantitative voluntary responses collected from the curricular evaluation tools. Outcome: • 89% in the child program responded positively to the impact questionnaire • 81% in the general program responded positively to the impact questionnaire	–
Stuck et al. 2012	30 Psychiatry residents, University of South Carolina, USA Participated alongside 13 psychology interns and 41 seminary students	Attitudes: • All participants had positive attitudes toward clergy • 99% agreed that interventions of clergy and psychiatrist/psychologists should complement each other	Seminary students: • 98% Protestant Psychiatry residents: • 59% Protestant • 16% Catholic • 7% other • 4.5% agnostic • 4.5% Hindu • 4.5% atheist • 2% Muslim Seminary students scored higher on the SWBS scale than residents	Two 3-hour workshops involving psychiatry residents, psychology interns and seminary students to enhance awareness and positive attitudes between the disciplines. It included small group inter-disciplinary discussions, seminars, and a case presentation. Outcomes: • Psychiatry residents showed significant improvement in knowledge of clergy on a pilot	–

			• Psychiatry residents scored at the upper end of "moderate" for each of these scales	scale • The global ratings for seminar evaluations were all "very good" to "outstanding" for both seminars. • 8/9 explicit goals of the program received "very good" to "outstanding" ratings.	
Mogos et al. 2011	Residents in GS, IM, Anaesthesia, University of South Carolina, USA	–	–	2-3 month curriculum that incorporates ethics and spiritual care for third year residents' rotating through the ICU. It consists of lectures, discussions, case reports, research articles, hands on and bedside training, core beliefs of various religions and spiritual practices. Outcomes: • IM and GS residents did not have a curriculum for spirituality/end of life care whereas Anesthesia and did • Residents were evaluated by 30 ICU nurses using a Likert scale across 40 questions. • Those who followed the spiritual curriculum were able to provide better total care when compared with those residents who did not have the same spiritual training	–
Kozak et al. 2010	Psychiatry residents, University of Washington	–	–	Curriculum over 4-year residency programme. Included didactics, rotation experiences, grand round presentations, case	–

	Psychiatry residency, USA			conferences and field experiences • Core objectives and curriculum structure are described Outcomes: • Enhanced ability to understand different cultural and spiritual perspectives • Increased comfort level in assessing SR backgrounds of their patients	
Saguil et al. 2011b	363 FM residents, USA	Attitudes: • 96.4% were willing to discuss spirituality if asked by a patient • Residents indicated that they would be more responsive to publications on traditional medical therapies than SR-related therapies • 93.9% agreed that they would be more willing to initiate SR discussions if presented with good evidence	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS score was 97.2, a score comparable with that of many Protestant religious groups Spiritual wellbeing, religious affiliation and race were significantly predictive of willingness to broach spirituality	–	Prior education: • 41.6% in residency • 58.7% in medical school • Prior training did not influence agreement to either statement (evidence on spirituality vs. evidence on a new medication)
Saguil et al. 2011a	363 FM residents, USA	Attitudes: • 59.8% strongly agreed, 19.8% moderately agreed, 16.8% agreed that they are willing to discuss spirituality upon patient request	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS score was 97.2, a score comparable with that of many protestant	–	Prior training: • 61.7% in medical school • 43.8% in residency • Significant association between prior training and increased

			religious groups • Denominational preference , self-rated spirituality, and spirituality instruction were significantly associated with strong agreement to discuss spirituality upon patient request		agreement to discuss SR upon patient request
Anandarajah et al. 2010	Expert panel of 8 focusing on dual discipline of FM and spiritual health, USA	–	–	To achieve consensus regarding spiritual care competencies tailored for family medicine residency training Outcomes: • 19 spiritual core competencies identified for training (6 on knowledge, 9 on skills, 4 on attitudes) that were linked to the competencies in the ACGME • 3 global competencies related to the dimension of context, patient-care and self-care identified for use in promotion and graduation criteria	–
Galanter et al. 2011	Psychiatry residents, patients, and chaplain trainees, Bellevue Medical Center, USA	–	• Medical trainees were less spiritual than both patients and chaplain trainees using a spirituality self-rating scale	Weekly spirituality group meetings open to patients. Led by psychiatry residents in rotation and spiritual teaching faculty. Patients were encouraged to discuss their own experience of spirituality and how it relates to their coping of the illness. Video recordings of their answers on why spirituality is important in their life were employed in classes for	–

				residents. Residents also received a seminar series on cultural competency Outcomes: • Third year residents gave the course high ratings relative to other trainings	
Grabovac et al. 2008	Psychiatry residents, University of British Columbia, Canada	–	–	6-hour SR course over six sessions. Involved both didactics and case-based discussions. Outcomes: • Significant increased comfort with spiritual issues in clinical practice • Several residents were hostile toward the introduction of the course into the curriculum, reflecting the transference of personal attitudes toward spirituality to the professional context	–
Anandarajah and Mitchell 2007	10 M4s in for the first 2 years and 8 M4s and 15 residents, faculty and staff, Brown Medical School, USA	–	–	Spirituality and medicine elective with eight 2.5-hour sessions over 4 weeks designed to improve learners' knowledge and skills regarding spirituality and patient care Outcomes: • Improvement in SR knowledge and skills	–
Yi et al. 2007	IM, PED, IMPED, FM residents,	–	• 73% Christian • 7% Jewish • 11% other	–	–

	University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA		• FACIT-SP-Ex for spiritual well-being was 71.5 (0-92). • Duke religion index showed moderated organized, nonorganized and intrinsic religiosity • Self-rated overall health rating scale (0-100) was used with a mean of 87 • Lower health rating scores were associated with poorer spiritual well-being • Religion and religiosity variables were not associated with self-rated overall health		
Kligler et al. 2007	FM residents across 6 different hospitals, USA	Practices: • Spirituality not often discussed with patients by integrative family medicine participants	–	Core FM program competencies are described. Tested a set of competency-based evaluation tools in integrative history taking and planning. Direct observation, written treatment plan and 2 OSCES were evaluated.	–
Marr et al. 2007	14 US Palliative Medicine fellowship directors	–	–	• All program directors had taught SR as part of curriculum • 12 had separate programs for teaching spirituality • 2 reported they taught spirituality but not as a distinct, separate program • Most Palliative Medicine programs agree on the content	–

				of training on spirituality, but no robust educational and evaluation methods in place • Common formats for education included small group discussion, lecture, self-study, supervision, shadowing a chaplain • No experiential (role-play etc.) education methods or evaluation	
Barnett and Fortin 2006	79 M2s and 58 IM residents, Yale University SOM, USA	–	–	Workshop included lectures, discussion, role-play to meet objectives. Outcomes: • All participants had significantly increased scores regarding the 1) the appropriateness of inquiring about spiritual and religious beliefs in the medical encounter, 2) perceived competence in taking a spiritual history, 3) perceived knowledge of available pastoral care resources • Participants appreciated the opportunity to discuss and reflect upon this subject in a safe space • Common questions remaining for learners after the workshop is whether it is the physician's role to ask about spirituality, and for which patient's is it appropriate.	–

Yi et al. 2006	227 Paediatric, IM, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	–	• 73% Christian • 7% Jewish • 11% other • 10% no religious affiliation • 25% met the criteria for having significant depressive symptoms • Significant depressive symptoms were associated with poorer religious coping, greater spiritual support seeking, and worse spiritual well-being	–	–
King and Crisp 2005	101 FM residencies regarding their spirituality and health care curriculum, USA	–	–	• 92% of program directors said spirituality teaching was important • Only 31% of programs have a specific curriculum • 86% reported using the current AAFP core educational guidelines Teaching methods: • 67% used lectures • 49% used clinical precepting • 44% used inpatient rounds • 25% chaplain rounds • 18% seminars	Facilitating factors: • Having trained personnel (39%) • Positive attitudes toward SR (39%) Barriers cited: • Lack of time (52%) • Lack of qualified personnel (31%) • Fear/discomfort about SR (32%) • Lack of priority (14%) • Lack of available personnel (12%)
Luckhaupt et al. 2005	247 IM, Paediatric, FM residents, University of Cincinnati and	Attitudes: • 90% believed that they should be aware of their patient's SR beliefs	• 46% Protestant • 26% Catholic • 7% Jewish • 11% other	–	–

	Cincinnati Children's Hospital Medical Centers, USA	• 46% felt that they should play a role in patients' spiritual or religious lives • 36% felt that they should ask patients about SR during office visits • 77% felt they should ask if a patient was near death • FM residents were more likely to agree with asking about patients' SR beliefs • Residents were less likely to agree with praying silently/aloud with patients than to inquire about beliefs	• 10% no religious affiliation Residents who felt that they should play a role in patients' spiritual or religious lives participated in organized religious activity with greater frequency, or had higher level of personal spirituality Advocating SR involvement was associated with FM residency, spiritual well-being, Positive religious coping and PGY year		
Grabovac and Ganesan 2003	14 Psychiatry residency programs in Canada	–	–	A survey of training currently available to Canadian residents in Psychiatry • 4 had no formal training in SR • 4 had mandatory academic lectures that provide between 1-4 hours of teaching • 9 programs offered some degree of elective, case-based supervision	–
Armbruster et al. 2003	56 residents in Paediatrics, SSM Cardinal Glennon Children's Hospital, Saint Louis University SOM, USA	Knowledge • 32.6% of residents agreed that they are not adequately trained to address SR issues Attitudes: • 90.9% of residents agreed that patient religious beliefs positively affected health • 56.8% of residents agreed that religious involvement reduced patient morbidity and mortality • 65% of residents agreed that	Resident religious affiliation • 85.7% Christian • 5.7% Jewish • 2.9% Muslim • 2.9% Hindu • 2.9% no religion	–	Facilitating factors: • Not expecting negative patient reactions to SR inquiry and prayer • Strong belief that SR is relevant to paediatric outcomes • Feeling capable inquiring about SR • Appropriate

		religious inquiry can enhance the therapeutic relationship • 43.2% of residents agreed that they should proactively acknowledge and support patients in their existing beliefs • 50% of residents disagreed that religious issues are the province of pastoral care, not the physician • 67.4% of residents agreed that offering to pray with patients was appropriate. • 52.3% of residents disagreed that patients/families would resent unsolicited questioning about SR Practice: • 6.8% would routinely inquire about the religious affiliation of the patient during new visits • 72% of residents would routinely inquire about the religious affiliation of the patient during health crisis or life-threatening illness			training with correction of misperceptions about SR in practice Barriers cited: • Lack of time (30%) • Personal discomfort (31.8%) • Lack of training (32.6%)
Siegel et al. 2002	65 residents in Paediatrics, Boston Medical Centre, USA	Attitudes: • 90% stated they thought it was appropriate to pray with a patient • 76% reported feeling comfortable praying with a patient if asked to do so • 35% stated they should initiate discussions of SR • 65% of pediatricians felt that faith plays a role in healing	SR orientation: • 46% "not at all" or "not very strong" • 33% "somewhat strong" • 21% "strong" Strong personal SR orientation was significantly associated with positive attitudes to SR in general but was not related to reported practices	–	–

		• 64% reported that clinician patient interaction would be strengthened by discussions of SR Practices • 19% say they do initiate SR discussions in clinical practice • <40% would ask SR for routine health maintenance visits • 93% would ask SR if discussing life threatening illness • 96% would ask SR when discussing death and dying independent			
Saba 1999	143 FM residents, University of California, San Francisco, USA	–	• Philosophical or spiritual frameworks were central to how residents viewed human existence, health and illness, and their role as a physician, and meaning to uncertain/painful events in their work • 63% described their beliefs/values to reflect formal philosophical or religious traditions • 85% explained that their desire to become a physician was rooted in a sense of mission or calling.	–	–
Oyama and Koenig 1998	31 FM faculty and residents, North Carolina and Texas, USA	–	Religious backgrounds, beliefs and behaviors of physicians and residents were different from patients. They may not realize the importance of religion to	–	–

			patients or the need to address these issues		
Waldfogel et al. 1998	121 Psychiatry residents, various US Universities	Knowledge: • 84% felt "somewhat to very competent" in their ability to recognize and attend to a patient's SR issues Attitudes: • 9% agreed that it is acceptable to pray with patients • 12% believed that it was acceptable to reveal their religious convictions in a clinical setting • 41% agree that religion is important in the clinical setting Practices • 25% reported weekly encounters with patients with clinically significant SR issues • 86% rarely discussed own religious beliefs with patients	• 29% Catholics • 28.9% Protestant • 12% Jewish • 14% other • 77% believed in God • 68% reported that religion is important in their lives • 74% believed that religion can help solve personal problems • 49% prayed weekly • 22% attended religious services weekly • 49% reported their religious beliefs affected their choice of medicine • Residents' religious affiliations was significantly related to their choice of medicine as a career	–	Prior training: • 27% reported that religion was discussed during didactic training as a resident • 39% of PGY3 to PGY5 reported that religion was discussed during supervision Facilitating factors: • Having exposure to SR through didactics or supervision was significantly associated with feeling competent to address SR issues, and feeling that SR is important in the clinical setting
Sansone et al. 1990	276 Program Directors in Psychiatry, USA	–	–	• 68.1% rarely or never had a course on any aspect of religion • Didactic instruction on any aspect of religion was infrequent • Clinical supervision on SR more likely to occur than didactic instruction	–

Abbreviations: AAFP = American Academy of Family Physicians, ACGME = Accreditation Council for Graduate Medical Education, ADSAs = Medical School Associate Deans for Student Affairs (ADSAs), CME = Continuing Medical Education, FACIT-SP-Ex = Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being, Expanded version, FM = Family Medicine, GME = Graduate Medical Education, GS = General Surgery, ICU = Intensive Care Unit, IFM = Integrative Family Medicine, IM = Internal Medicine, IMPED = Combined Internal Medicine Pediatric, MBI = Maslach Burnout Inventory, PED = Pediatrics, PGY = Post-Graduate Year, SR = Spirituality and Religion, SC = Spiritual Care, SIBS = Hatch Spiritual Involvement and Belief Scales, SOM = School Of Medicine, UME = Undergraduate Medical Education

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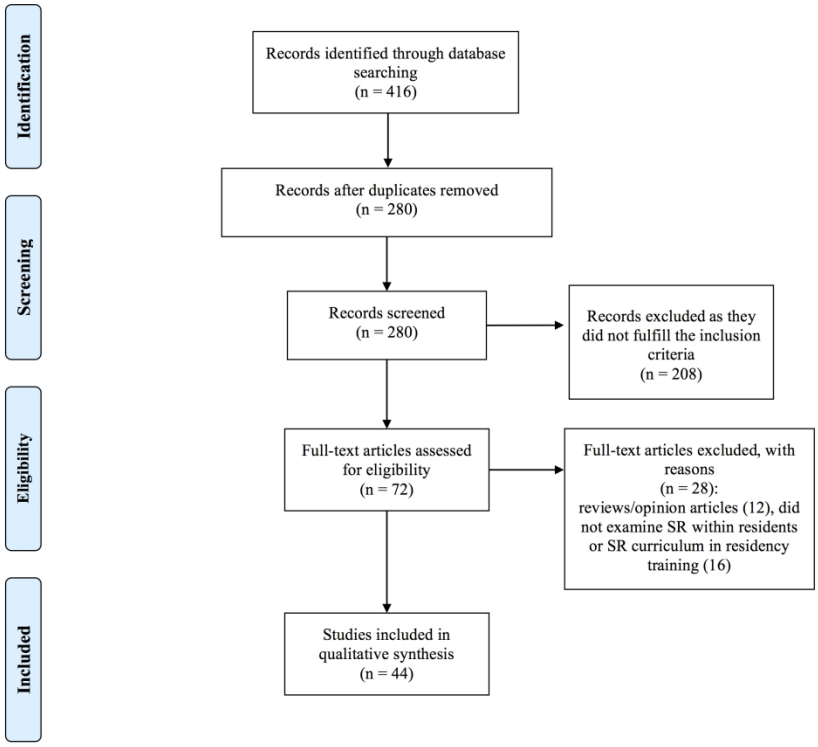

Figure 1. PRISMA flowchart of reviewed studies related to Spirituality and Religion (SR) in Residency Training

215x279mm (300 x 300 DPI)

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	5
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	–
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	6
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	6
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	6
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	6
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	–
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	–
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	–
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	7, Fig.1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	–
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Table 1
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	–
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	–
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	–
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	14-15
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	16-17
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	16
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N.A

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

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Title: Spirituality and Religion in Residents and Inter-relationships with Clinical Practice and Residency Training: A Scoping Review

Running head: Spirituality and Religion in Residency

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Abstract

Objectives: With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for the physician to address issues related to spirituality and religion (SR) during clinical consultations with patients. In light of the clinical need to improve SR-related training in residency, this review sought to examine the extant literature on the attitudes of residents regarding SR during residency training, impact on clinical care and psychological well-being of residents, and SR-related curriculum implemented within various residency programs.

Design: A scoping review was conducted on studies examining the topic of SR within residency training up until July 2020.

Results: Overall, 44 studies were included. The majority were conducted in North America (95.5%) predominantly within Family Medicine (29.5%), Psychiatry (29.5%) and Internal Medicine (25%) residency programs. While residents held positive attitudes about the role of SR and impact on patient care (such as better therapeutic relationship, treatment adherence, coping with illness), they often lacked the knowledge and skills to address these issues. Better spiritual well-being of residents was associated with greater sense of work accomplishment, overall self-rated health, decreased burnout, and depressive symptoms. SR-related curricula varied from standalone workshops to continuous modules across the training years.

Conclusions: These findings suggest a need to better integrate appropriate SR-related education within residency training. Better engagement of the residents through different pedagogical strategies with supervision, feedback, reflective practice and ongoing faculty and peer support

can enhance learning about SR in clinical care. Future studies should identify barriers to SR-related training and evaluate the outcomes of these SR-related curriculum including how they impact the well-being of patients and residents over time.

(268 words)

Keywords: Spirituality; Religion; Residency; Medical Education; Curriculum

Strengths and limitations of this study:

- There is a paucity of studies that examines spirituality and religion (SR) in the context of residency training
- This review was conducted to examine SR-related attitudes in residents, how it translates to clinical practice, as well as the adequacy of SR training in residency, with findings that would be generalisable to all relevant training programs
- There was a lack of cultural diversity in the studies included in the review, with most originating in the West.
- There was inadequate evaluation of the barriers and clinical outcomes concerning SR-related training in residency both in the short and long term.

INTRODUCTION

The distinct boundary between medicine and religion has been apparent since the advent of "reason-oriented scientific thinking", which is related in part to the notion that rational thinking in the sciences is incompatible with faith based reasoning in spirituality and religion (abbreviated as SR).[1, 2] Spirituality has been defined as the "dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationship to self, family, others, community, society, nature, and the significant or sacred.[3] Spirituality is expressed through beliefs, values, traditions, and practices".[3] Religion is seen as a specialised category of spirituality reflected by the institutionalized expression of shared beliefs, values, experiences, doctrines, traditions, and faith by a community of like believers, and usually involving a ritual.[4] In an effort to establish themselves as distinct scientific undertakings, it was necessary for disciplines such as psychiatry and behavioral sciences to distance themselves from religion.[5] Sigmund Freud, the founder of psychoanalysis described spiritual experiences as a "universal obsessional neurosis", a form of "pathological thinking in need of modification".[2, 6] However, since the 1980s, there has been some literature to support the positive influences of SR on the physical and psychological well-being of individuals.[7, 8] With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for physicians to address issues related to SR during clinical consultations with patients.[3, 9, 10] In palliative and oncology specialties, some have advocated an expansion of the "biopsychosocial" framework in the formulation of clinical care for each patient to that of a more wholistic "biopsychosocial-spiritual" model.[11-13] However, the incorporation of SR into residency training has not necessarily caught up with this clinical

need; and at present, teaching in SR has not been consistently and appropriately integrated into the training curriculum.[14, 15]

Based on extant literature, the majority of patients wanted physicians to be aware of their SR and appropriately address issues related to SR.[16-20] However, physicians seldom incorporated discussion of these issues into their practice.[21-23] One of the most commonly cited barriers to discussing SR by physicians is lack of training.[21, 22, 24] A previous review amongst practising physicians found that prior training on SR related issues was the strongest predictor for providing clinical care which incorporates considerations of SR in patients.[21] Thus, there is a need to examine the prevailing knowledge, skills and attitudes regarding SR amongst residents in training as well as appropriate SR-related curriculum that have been incorporated within residency training.

In light of the clinical need to improve SR-related training in residency and the paucity of existing reviews consolidating prevailing attitudes and practices regarding SR, we sought to conduct a scoping review, specifically focusing on three main levels (personal, clinical, and training). We were interested to understand how residents viewed SR on a personal level and how this affected them psychologically. We also wanted to know how these views could interact with clinical practice. Lastly, we were keen to understand the extent to which SR has been successfully incorporated into residency training.

MATERIALS AND METHODS

This scoping review was directed in agreement with the methodology of the Joanna Briggs Institute for scoping reviews.[25] We followed the six steps of Arksey and O'Malley methodological framework for conducting scoping reviews updated by Levac et al. to guide the process.[26] The first step involves identifying the main research questions our review hoped to address. They are as follows:

1) How do residents view SR on a personal level? (Attitudes towards SR in clinical practice, amount of knowledge they have on SR and extent to which they feel confident in addressing SR-related issues, how their personal SR affects their well-being)
2) How does SR in residents interact with clinical practice?
3) How has SR been incorporated in residency training, and to what extent has this been successful or helpful?

The second step involves identifying relevant studies. We searched the PubMed/Medline and Web of Science databases for relevant studies that examined issues relevant to SR within residency training from database inception until July 2020. Keywords for the literature search included: (Spirituality OR Religion) AND (Residen* OR "Postgraduate Medicine" OR "Post-graduate Medicine" OR "Graduate Medical Education"). The inclusion criteria are as follows: a) sample must include those in residency training, b) article must examine issues relating to residents' SR at a personal level, and/or its influence on clinical practice, and/or SR in residency training, c) article must be published in English. Studies were excluded if a) they were systematic reviews, case reports, opinion articles, or dissertations, b) focused only on

undergraduate medical students, or c) discussed SR issues only from the perspective of the patient or caregiver.

The third step involves study selection. We manually screened the abstracts of identified reports to ascertain whether they met the inclusion criteria, then reviewed full reports of promising studies. Two independent reviewers simultaneously screened the titles and abstracts. In case of any inconsistency between reviewers, the disagreement was resolved by a third reviewer.

The fourth and fifth steps involve charting, collating, summarizing, and reporting the results. For each included study we extracted variables including the characteristics of subjects, the type of residency program and the salient findings. The preceding data was organized within digitalized spread sheets and then summarized into a table to help facilitate critical assessments and for independent consideration by readers. The results were grouped into the three main areas of interest, namely 1) the personal aspect of SR, 2) SR in clinical practice, and 3) SR training in residency as far as was possible. Nonetheless, there were overlaps noted between themes two and three, particularly in the area of barriers and factors that facilitated the discussion of SR in clinical practice. The preferred reporting items for systematic reviews (PRISMA) flowchart for this review is shown in Fig.1.[27] Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research. As the aim of our scoping review was to provide an overview of the topic of RS in residency, a formal assessment of the quality of studies was not performed, as is typical with most scoping reviews.[25]

[Figure 1 near here]

The sixth step involves consultation with both residency faculty and residents. Findings of this review will be shared at meetings. Opportunities for obtaining suggestions to incorporate RS training into residency and for exchange of ideas will be provided.

Patient and Public Involvement

No patient involved.

RESULTS

Table 1 summarises the main findings from the 44 studies included in this review. Most of the studies were conducted in the USA (39/44, 88.6%),[4, 5, 14, 15, 28-62] and 3 were from Canada,[63-65] 1 from Denmark,[66] and 1 from South Africa.[67] Of the 44 papers, 24 (54.5%) reported data related to Theme 1,[4, 5, 28, 29, 31, 32, 35, 36, 38, 39, 42, 43, 45, 48, 49, 51, 53, 57-59, 60, 62, 63, 66] 18 (40.9%) reported data related to Theme 2,[4, 5, 28, 29, 31, 32, 35, 36, 41, 45, 48, 49, 54, 58, 59, 61-63] and 35 (79.5%) contained data related to Theme 3.[4, 5, 14, 15, 28-31, 33-37, 39-42, 44, 45, 46-52, 54-56, 62-67] In terms of specialties included, the most frequent were Family Medicine (29.5%), Psychiatric (29.5%), and Internal Medicine (25%) residency programs.

Theme 1: Personal aspect of SR in residents

Most psychiatry residents held positive attitudes towards the importance of addressing SR within psychiatric care.[5, 35, 39] The majority of residents agreed that a patient's beliefs in

SR is an important component of compassionate care,[5, 35, 36, 63] and can affect the health status of patients.[5, 28, 31, 56, 63] Most residents believed that the beliefs of patients regarding SR are important considerations during formulation of treatment plans, especially in conditions such as depression, addictions, complicated grief and end of life care.[5, 63, 66] Residents agreed that an understanding of SR-related issues can improve the adherence and success of a treatment plan,[4, 31, 63] and more than 80% agreed in some studies that a patient's beliefs regarding SR can help patients cope better with their illness.[35, 31, 63] Residents also believed that a physician's own spiritual or religious beliefs can in turn affect patient care[5, 28, 56, 63, 66] and that the discussion of SR-related issues can further strengthen the therapeutic relationship.[4, 59, 63]

There was some uncertainty about how the topic of SR should be broached during clinical encounters. Although many residents felt it was appropriate to discuss spiritual or religious concerns with patients,[28, 31, 48, 49, 56, 63] others felt that topics related to SR were too personal to ask, or had ethical concerns about raising such a topic during clinical encounter for fear of influencing the beliefs of patients regarding SR.[31, 63] Most residents agreed that self-disclosure of one's own beliefs about SR without permission of the patients was inappropriate.[61, 62, 63] In addition, there was uncertainty regarding who should initiate discussion about issues related to SR,[4, 5, 59] how routinely it should be asked,[4, 5, 36] and under what circumstances.[36, 58, 59] When illness was serious or near the end of life, 70-90% of residents surveyed believed it was appropriate to ask, especially within Family Medicine residents.[58, 59]

In terms of praying with patients, there were inconsistent findings. While two pediatric studies found that a relatively high proportion of residents (>60%) believed that it was appropriate to pray with a patient,[4, 59] other studies reported reservations within the residents.[31, 34, 63, 58, 61, 62]

Residents in several studies agreed that chaplains and clergy were valuable and integral to patient care,[4, 5, 28, 45] but the coordination between the chaplains and treatment team in managing discussion about SR-related issues needs to be further examined.[4]

Most residents had some religious preferences,[28, 59] and at least half would describe themselves as "spiritual", "religious" or both.[31, 35, 38, 63] In one study, more than 70% believed in God, reported that religion is important in their lives, and believe religion can help to manage their personal problems.[62]

Residents scored moderately high on a spiritual well-being scale[45, 49, 53] and religiosity scales.[45, 53] Conversely, other studies showed that the majority of residents did not attend religious services more than a few times a year and less than 30% agreed that they carried their religious beliefs into their daily life.[28, 62, 32] The frequency of prayer varied across different studies.[32, 61, 62]

Personal religiosity and self-rated spirituality correlated positively with residents' willingness to discuss issues related to SR with patients,[29, 48, 49, 58, 59] collaborate with the clergy,[29, 59] and their perceived importance of SR in patient care.[29, 59] Residents that used

positive religious coping in their own lives were significantly more likely to initiate SR-related inquiry with their patients.[58] In a pediatric study, residents with higher religiosity scores received better perceived communication scores from adolescent patients.[32]

In terms of correlations with the psychological well-being of residents, residents with higher total scores on the Hatch Spiritual Involvement and Beliefs Scale (SIBS) had a greater sense of accomplishment in their work.[38, 43] The humility/personal application domain of the SIBS, which relates to the theme of relational quality, was negatively correlated with burnout.[43] Of note, the External Practices domain of the SIBS scale (e.g. church going) was not significantly associated with burnout.[38, 43] Poorer scores on spiritual well-being was also associated with lower self-rated overall health.[53] In addition, poorer spiritual well-being scores, religious coping and greater spiritual support seeking were associated with depressive symptoms.[57] Some residents related their beliefs regarding SR with a sense of mission or calling in their practice,[60] and in one study almost half of the respondents reported that their religious beliefs influenced their choice of medicine as a career.[62]

Theme 2: SR in clinical practice

In terms of practice,[4] conducted a study on pediatric faculty and residents and found that while few residents routinely inquired about SR-related beliefs, this figure increased to 72% in the case of a health crisis or life-threatening illness.

In terms of the frequency of clinical encounters, around 70% of residents reported 'rarely if ever' being asked by a patient or family to discuss SR-related issues or pray.[4] An earlier study[62] found that 25% of psychiatry residents reported meeting patients with issues related to SR at least once a week, 30% monthly, and 44.5% rarely in their experience. Less than 15% of these residents reported discussing their own religious beliefs with patients at least once a month.[62] Another study of Internal Medicine residents found that 85% reported making at least one chaplain referral in the last month during inpatient service.[36] Those who were more likely to engage in routine inquiry about SR issues were residents who did not expect negative patient reactions, believed strongly that addressing SR-related concerns was relevant to treatment outcomes, and felt more capable with inquiring about SR-related issues.[4]

There were several barriers noted towards addressing SR-related concerns during clinical encounters. The most common barrier was insufficient time during clinical encounters.[4, 31, 35, 36, 63] A longitudinal study found that while skill-related barriers to discussing SR issues decreased with time and training, structural barriers such as time remained.[35] Other commonly mentioned barriers included concern about offending patients, insufficient training/knowledge, general discomfort and disapproval by peers.[4, 31, 35, 36, 63]

Theme 3: Residency training

Amongst several relevant studies, more than 40% of the residents had received prior teaching regarding SR-related issues in medical school.[28, 30, 48, 49] Prior training was

associated with greater self-reported competency,[62] more positive attitudes towards SR,[49, 62] and increased likelihood to engage in routine inquiry about SR-related areas during patient encounters.[4]

The majority of residents lacked knowledge on the SR-related concerns of patients,[28] the role of clergy/clinical chaplains[28, 35, 45, 56] and the availability of spiritual assessment tools.[35, 36] When asked, residents were not satisfied with their current knowledge and skills regarding spirituality, [41] with approximately 50% of residents feeling inadequately trained to address the SR-related issues of patients.[4, 63] In addition, residents varied widely in terms of the level of comfort and self-reported competency in addressing SR-related care issues. For example, some studies noted low self-reported competency of residents in taking a spiritual history,[5, 28, 41, 56, 66] formulating an action plan, and reflecting upon one's own existential/spiritual values brought into the consultation.[66] However, other studies found that residents were comfortable when it came to discussing SR issues with their patients[31, 36, 62] and incorporating SR considerations into a management plan.[31]

Several papers surveyed program directors on the inclusion of SR-related curriculum in training[14, 15, 55, 65] and described the development of core competencies or evaluation tools for SR-related curriculum in residency training.[50, 54, 67]

In terms of the presence of SR-related curriculum, there was wide variation in terms of the incorporation of specific teaching on SR within residency training programs. Sansone's 1990 nationwide survey of US psychiatry programs reported that only 12% of programs had any

teaching on SR in residency.[14] In Canada, only four of 14 programs that responded had mandatory academic lectures that provided between 1-4 hours of teaching.[65] For Family Medicine residency programs in the US, a previous study found that 31% of the programs had a specific curriculum, averaging 6 hours long.[15] In comparison, another study examining Palliative Medicine residency programs in the US showed that 12 out of 14 programs had incorporated separate teaching on SR in their curriculum although few had robust educational and evaluation methods in place.[55]

The nature of SR related curriculum included one-off workshops,[29, 56, 66] continual modules over months,[52, 64] and curriculums spanning across the years of residency. The latter was seen in Psychiatry,[5, 44, 47] Family Medicine,[35] and Internal Medicine[28] residency programs. Most studies used simple pre/post surveys for evaluation, with very few interventions incorporating frequency of SR inquiry,[39] patient feedback and long-term effects of curriculum[35] into evaluation outcomes.

In terms of the pedagogical methods, common formats included lectures,[28, 47] small group discussions,[45] and case presentations/conferences.[5, 47] Several studies described an inter-professional approach that integrated the teaching of SR within chaplain and clinical rounds.[35, 37] Others methods included the use of reflective writing,[33] OSCE,[42] theatre improvisation and role play[66] to teach SR within resident training.

From a curriculum planning point of view, the reported barriers for incorporating SR training into curriculum included finding adequate timeslots within training curriculum, and the

lack of trained personnel.[15, 30]

DISCUSSION

Our review found that residents in training recognized the importance of addressing SR-related concerns in patient care,[28, 31, 56, 63] and acknowledged that it can strengthen the therapeutic relationship[4, 59, 63] and impact positively on treatment adherence and clinical outcomes.[4, 31, 63] However, in practice, SR-related issues were infrequently addressed.[4] This can be attributed to several factors. Firstly, there is lack of knowledge and training about what to ask regarding SR as was reported in several studies.[4, 28, 41, 63] Secondly, there is personal discomfort for some residents which may be related to a sense of inadequacy in addressing SR-related issues, concerns about negative responses of patients or ethical concerns about raising such a topic during clinical encounters.[31, 63] Thirdly, pressure of time during clinical encounters may not allow this area to be addressed.[31, 63] Fourthly, the frequency of inquiry seemed to be dependent on clinical context. For example, residents indicated that they were more likely to ask about SR-related issues during end-of-life situations.[4, 5, 59] This could be related to patients themselves initiating the topic or residents believing that discussion about SR is more appropriate during end-of-life settings. Residents scored moderately high on a spiritual well-being scale[45, 53] with more than half considering themselves to be either spiritual or religious.[63] Increased scores on spiritual well-being was associated with better self-rated health, less burnout and less depressive symptoms.[38, 43, 53, 57] These findings were

consistent with findings amongst other populations. A study of medical students reported significant inverse correlations between measures of spirituality and measures of psychological distress/burnout.[68] Similar associations have been found among physicians in oncology and palliative medicine.[69, 70] In turn, residents who had stronger personal beliefs regarding SR were more willing to discuss SR-related areas with their patients[29, 48, 49, 58, 59] and perceived that addressing such concerns had a positive impact on patient care[29, 59] Those who used positive religious coping mechanisms were also significantly more likely to pray with patients and ask about their religious beliefs.[58] This is consistent with studies which found that physicians with higher religiosity scores were more likely to discuss SR-related issues with patients, believe that addressing SR-related concerns strongly influenced treatment outcomes; and consider the influence of SR in positive rather than negative ways in their clinical practice.[71, 72]

SR is an important part of clinical care, and its successful integration is dependent on the physician's self-awareness of his/her own SR, as well as the careful delineation of professional and personal boundaries when handling SR issues during clinical encounters. Respecting the patient as an individual and providing holistic care involve taking into account their SR beliefs while also being mindful of the possibility of coercion due to the power differential that is inherent in the physician-patient relationship.[73] Although the pressure to blur the boundaries between the professional and personal sphere often comes from patients, research suggests that many patients desire to have prayer as an adjunct to conventional medical treatment rather than an alternative or substitute.[73] This indicates that many patients are aware of the need for medical treatment, and physicians should be cautious of swinging to either extreme by

unintentionally touting RS practices as a cure for diseases, or being dismissive of patients who appear to be strongly religious/spiritual. Hence, there is a need to enhance the physician's self-awareness of such boundaries and to train them on ways to navigate discussions on SR with sensitivity from the beginning of residency. In addition to these aims, healthcare professionals should also be encouraged to approach issues of SR with the aim of empowering the patient.[74] By assuming the role of a spiritual advocate, physicians can promote patients' moral agency and maintain the centrality of patients' concerns throughout the course of illness and treatment.[74]

In terms of curriculum, pedagogical modules related to SR were more commonly found in palliative medicine residency programs[55] than other residency programs. This could reflect the increased severity of illness and end of life scenarios seen in palliative medicine,[75] greater willingness and acceptance of patients and clinicians to address topics related to SR,[76] or even the desire of residents to optimize the care and management of patients during the course of their illness. Interventions described were largely one-off workshops with only a few incorporated within the existing training curriculum. The most common pedagogical methods included didactics, small group discussions and case presentations.[35, 47] Other pedagogical methods that can be used to better engage and equip the residents include involvement of an inter-professional team members such as chaplains if available,[37] discussion groups with patients,[51] written reflection,[33] and role play.[66] Thus far there have been few formal evaluations[35, 39] of the effectiveness of such SR-related curriculum in engendering better patient evaluation, care, and support through patient and resident feedback channels.

There are several practical implications from this review. First, there is a need to facilitate the appropriate inclusion of SR-related topics into the residency curriculum and clinical assessment so that there is congruence between teaching and clinical practice. Frameworks such as the FICA (Faith, Importance, Community, Address)[77] or HOPE (Hopes, Organised religion, Personal spirituality and practices, Effects on medical care)[78] can be introduced early into training to help residents incorporate SR discussion into their clinical practice. With early training, residents would be better prepared to deal with such topics competently and with sensitivity regarding the diverse beliefs of patients during clinical encounters. Second, to engage the residents in training through different pedagogical strategies in view of the constraints of time. This could include blended and hybrid learning, a combination of didactics and case discussions to expand exposure, involvement of chaplains, and discussion groups with patients to highlight relevance of addressing SR issues in training. In addition, role play within the group can help residents in their practice of SR-related acquired skills and tools before actual patient encounters. Third, to reflect on patient encounters involving SR and consider the challenges faced and possible improvements to the approaches used. Fourth, to support resident efforts when they encounter challenges through faculty supervision, feedback and peer support.

This study has several limitations. Firstly, the papers reviewed are limited to the West save for one study done in South Africa. It would be important to encourage studies from different parts of the world as it is likely that different cultures and belief systems would influence approaches toward addressing SR-related issues in residency training and practice. Second, few studies reported on quantitative measures related to SR in training and clinical care such as the frequency of resident-initiated and patient-initiated inquiries related to SR, or SR-related discussions across different clinical circumstances. Third, few studies evaluated the long-

term outcomes of teaching SR-related issues during resident training. Thus, future studies may want to examine areas such as patient well-being, resident well-being, perceived learner satisfaction and long-term outcomes following interventions to incorporate SR in residency training.

CONCLUSION

In conclusion, we found that while residents acknowledged the benefits of addressing SR-related issues during clinical encounters, they varied in terms of their level of comfort in addressing these areas. Possible contributory factors included lack of knowledge, constraints of time, personal beliefs about SR and prior training. Several practical considerations were suggested such as the intentional and appropriate inclusion and integration of SR related topics into the training curriculum and better engagement of learners through varied pedagogical strategies.

Table 1: Summary of the main findings related to Spirituality and Religion (SR) in relevant studies within Residency Training

Author/year	Type of study	Outcomes (Assessment method)	Participants and residency program	Theme 1: Personal aspect of SR in residents	Theme 2: SR in clinical practice	Theme 3: Residency training
Piscitello & Martin [28] 2019	Intervention	Residents' knowledge, attitude, and skills regarding SR pre- and post-intervention (Survey)	123 IM residents PGY 1-4, University of Chicago, USA	• 96% agree that a patient's SR can affect their health • 70% believe a physician's SR beliefs can affect patient care • 76% thought it is appropriate to discuss SR concerns with patients • 94% believe chaplains are valuable in patient care • 22% Roman Catholic • 13% Judaism • 11% Protestant • 9% Hinduism • 4% Islam • 69% had a religious preference • 62% attended religious services at least once a year • 18% agreed with the statement "I try hard to carry my religious beliefs into all other dealings in life"	• 53% have discussed SR concerns with patients • 42% reported having prayed with a patient during residency training	• 57% had knowledge about the role of chaplains • 4% had knowledge about type of training chaplains receive • 33% lacked knowledge in spiritual concerns at the end of life • 24% lacked knowledge on religious rituals requested • 15% felt competent to take a spiritual history 3-part series over 1 year to increase resident knowledge on how SR and medicine affect patient health, increase the understanding of the role of chaplains and increase resident comfort in spiritual history taking Included lectures, discussion groups, and a panel of experts Outcome: • Knowledge of

						chaplains increased • No other changes in SR knowledge, attitudes or skills Prior education: • 40% received education in SR in medical school • 7% in residency
Kelley et al. [29] 2018	Intervention	Residents' approach to treating African-American Christian patients pre- and post-intervention (Survey)	51 Psychiatry residents at Western Psychiatric Institute, USA	• 37.8% Christian • 18.5% other religions • 13.5% atheist • 16.2% agnostic	Personal religiosity positively correlated with: • Willingness to discuss SR • Willingness to collaborate with clergy • Perceived impact of religion	4-hour collaborative workshop involving community based clergy designed to: • Improve attitudes toward the role of religion in mental health for African American Christians, • Increase comfort in talking with patients about spirituality • Increase willingness to involve clergy in team approach. It included a didactic session, small group case-based discussions and a panel discussion Outcome: • More comfort in discussions with patients about SR • Greater willingness to collaborate with clergy

						• Greater importance of religion to mental health
Hvidt et al. [66] 2018	Intervention	Develop and evaluate a course program in existential communication targeting general practitioners (Survey)	14 practicing General Practitioners and 5 residents in training from one Danish region, Southern Denmark	• 47% are 'believers'	–	8 hour vocational training/CME course on existential communication (cancer patients) Three parts: theoretical input, group/self-reflection, communication training (theatre improvisation with case studies) Outcome: • Participants showed increased self-efficacy in SR communication, working on their own barriers and self-reflection of existential/spiritual values brought into consultation • Increased perceived importance on communication about SR concerns • 89% felt improvements in communicating existential issues • Qualitative data showed beneficial self-reflective processes

Rosendale and Josephson [30] 2017	Intervention	Understand the current prevalence and need for cultural responsiveness training among program directors of neurology programs (Survey) Evaluate pre- and post-training outcomes (Survey)	Needs assessment: 47 (36%) program directors of academic Neurology programs nationally, USA	–	–	Prior training: • 17% no formal training • 54% some training in college • 54% monthly or more frequent training in medical school Barriers to formal training: • Time • Lack of expertise • Lack of educational materials Needs assessment: 65% of neurology programs did not have formal diversity curriculum training Integrated diversity curriculum pilot: Six 1 hour weekly lectures covering ethnicity, language, religion, sexual orientation, gender identity/expression, SES Included lectures, religious leader panel discussion, grand rounds Outcome: • Most residents felt strongly that formal training in cultural responsiveness was important

Gattari et al. [31] 2018	Observational	Examine attitudes of residents in relation to SR in patient care (Survey)	22 third year medical students, 12 Psychiatry residents, 7 attending psychiatrists, Wayne State University School of Medicine, USA	• 66.7% religious, spiritual, or both • 87.8% agreed that it was important to inquire about SR • 92.7% felt that considering SR of patients can improve compliance and success to the treatment plan • 87.8% felt that SR helps their patients cope with distress • 26.8% felt religion was too personal to ask • 31.7% had ethical concerns about discussing SR	• 29.3% would pray with patients • 97.6% would consider SR when making management plan • 75.6% felt comfortable asking about SR issues • 82.9% felt comfortable addressing patients' SR problems or needs • 97.6% felt comfortable considering patients' cultural community and practices when formulating a treatment plan Barriers to discussing SR: • 63.4% insufficient time • 51.2% concerned about offending patients • 46.3% general discomfort • 12.1% disapproval by peers	• 56.1% felt they had insufficient training/knowledge Prior training: • 22.7% for medical students • 41.7% for residents
Woods and Hensel [32] 2018	Observational	Assess residents' SR in relation to self-efficacy and communication with patients during adolescent clinic visits (Established questionnaires)	46 residents in Paediatrics rotating through the adolescent clinic from August 2013 to August 2014, USA 364 patients	• 32% Christian-catholic • 26.1% no religious affiliation • 23.9% Christianity (protestant) • 36.9% attend religious services a few times a year 26.1% at least once a month, 19.6% never	Residents with higher religiosity received better perceived communication scores from patients. Residents that were protestant or 'other' received better communication scores than those that were Catholic	–

			seen by residents in adolescent clinics	• 58.7% rarely or never prayed • 60.8% disagreed that they tried hard to carry religion into their daily life • Majority of residents did not feel any of the terms on the spirituality questionnaire applied completely to their body		
Vicini et al. [33] 2017	Intervention	Introduced reflective writing into a family medicine residency to nurture self-development without using it as an assessment method (Qualitative analysis of written reflections)	Family Medicine residents from Tufts University SOM, USA	–	–	15 minutes of reflective writing three times a week as part of medical residency curriculum to help residents explore their inner lives. Residents wrote reflections about their experiences with patients. Themes of reflective writing: • Longings and desires • Self-doubt • Helplessness • Existential questions Outcome: • Residents saw value in self-reflection • Expressed desire for group discussions to

						normalize their thoughts and feelings with their peers
McGovern et al. [5] 2017	Intervention	Assess the impact of incorporating SR into the curriculum (Survey)	12 Psychiatry residents from Texas Tech University of Health Sciences Center, USA	• 33% Christians • 33% Hindus • 25% Muslims • 8% agnostic • 85.7% believed that psychiatry should not distance itself from SR • 71.4% believed that appreciating their own spirituality would be helpful in patient care • Large majority of residents agreed that managing spiritual concerns are important in the treatment of suffering, depression, end of life care, addictions, guilt, and complicated grief	• 78.6% agreed that knowledge of spirituality enhanced clinical competency • Mixed response if spirituality should be assessed on a regular basis • 42.8% agreed that discussion of SR issues should be initiated by patients • 85.7% agreed that awareness of patient spirituality facilitates compassionate and competent care • 71.4% agree that assessment of patient's spiritual needs improves treatment planning and outcomes	• 38.4% agreed, 30.8% disagreed, 30.8% not sure that they were able to take a spiritual history • 92.8% agreed that training enhances one's skills to communicate about spiritual matters Spirituality training was incorporated into the existing 3 year curriculum. Included didactic experiences in seminars, clinical and other training experiences (including spirituality dinners). Evaluation was done using the SARPP survey to measure spirituality awareness. Outcome: • 46% report increased awareness and integration of spirituality into their clinical practice • 69.2% considered the curriculum to be

						meaningful • 92.3% feel that it has improved their clinical expertise with issues of spirituality
Leong et al. [34] 2016	Intervention	Knowledge of clinically relevant Islamic teachings regarding end-of-life care in palliative care physicians pre- and post-educational intervention (Survey)	14 Palliative Medicine clinicians including attendings, fellows, residents and nurse practitioners, USA	–	–	1 hour educational intervention with a Muslim chaplain with Q&A Outcome: • Knowledge of clinically relevant Islamic teachings regarding end-of-life care improved significantly after intervention • Intervention was well-liked and clinically useful
Anandarajah et al. [35] 2016	Intervention	Immediate and long-term effects of a required, longitudinal, residency SC curriculum, which emphasized inclusive patient-centered SC, compassion, and spiritual self-care (Surveys administered pre-, immediately post-, and eight years post-intervention)	26 FM residents, New England, USA 13 received intervention, 13 did not receive any curriculum 49 transcripts analyzed over the 8 year study Qualitative interviews	• Control and Intervention group had similar religiosity and religious affiliations • Majority Christian • Majority either spiritual or religious • Physicians held positive attitudes toward spirituality in patient care • All residents pre-intervention endorsed the role of spirituality in	• Structural barrier (lack of time) cited	Prior training: • Most had no prior SR coursework 24 hours of spiritual care curriculum over 3 years, with pedagogical methods including didactic sessions, small groups, direct clinical care, and experiential and reflection activities. • For untrained groups, self-assessment of knowledge and skills depended on the

			done 3 times over 10 years for intervention group, 1 time for control.	patient care as "one of the biggest ways people deal with their illness". • All endorsed a relationship between spirituality and compassionate patient care.		importance of spirituality in their own lives • Clinical approach to spiritual care varied from common sense interviewing techniques in untrained groups to nuanced approaches in the intervention physicians Outcome: • Intervention group had progressive improvements in clinical approach, knowledge, SC skills and spiritual self-care strategies • Decrease in skill-related barriers • Residents valued compassion shown to them, opportunities for spiritual self-care/reflection
Hemming et al. [36] 2016a	Intervention	Evaluate the need for, and the post-intervention outcome of a team-based curriculum for chaplain trainees and internal medicine residents working side-by-	34 IM residents, John Hopkins Bayview Medical Centre, USA	• 82% felt that addressing a patient's spirituality was an important part of patient care	• 21% of residents had knowledge of a spiritual assessment tool • 9% had used such a tool at least once • 85% (29 of 34) of residents reported having made at least 1 chaplain	Interprofessional curriculum to address gaps in spiritual knowledge and skills. Integration of a chaplain intern with 1 inpatient medical team during a 4 week rotation.

		side in the inpatient setting (Survey)			referral during their most recent month of inpatient service Barriers cited: • Lack of time • Uncertainty in approaching topic • Language differences	Outcome: • Rotations with chaplains received significantly higher ratings in residents' understanding of patients values and level of collaboration with chaplains • Needs assessment repeated the following year showed 36% absolute increase in those who reported being very comfortable in discussing a spiritual concern with a patient
Hemming et al. [37] 2016b	Intervention	Understand the benefits and challenges of learning together in an interprofessional curriculum that partnered internal medicine residents with chaplain interns in the clinical setting (Focus groups)	10 IM attending physicians, 10 chaplain interns, and 10 residents, John Hopkins Bayview Medical Centre, USA	–	–	An interprofessional curriculum for internal medicine residents and chaplain interns with the aim to improve medical resident's ability to provide care that is sensitive to spiritual needs and equip chaplain trainees to work with physician. Chaplain interns are paired with the medicine team 1 day per week for 4 consecutive weeks on the Aliki service. Focus groups conducted for physicians, interns, residents on interprofessional

						curriculum. Outcome: Increased awareness of effective communication skills
Doolittle and Windish [38] 2015	Observational	To determine the correlation of burnout syndrome with specific coping strategies, behaviors, and spiritual attitudes among interns in internal medicine, primary care, and internal medicine/pediatrics residency programs at two institutions (Established questionnaires)	44 IM medicine interns, 19 primary care, 4 IM residents, Yale University, USA	• 48.5% considered themselves to be spiritual • 1.5% considered themselves to be religious Correlation between spirituality (SIBS) and burnout domains • Those with higher total SIBS score as well as higher scores on the internal/fluid and existential/meditative domains of the instrument had a greater sense of accomplishment in their work • SIBS score had no association with the prevalence of emotional exhaustion or depersonalization on the MBI • External Ritual domain (church going etc.) was not significantly correlated with burnout	–	–

Awaad et al. [39] 2015	Intervention	Program evaluation study of a course on religion, spirituality, and psychiatry that deliberately takes a primarily process-oriented, clinically focused approach (Survey and qualitative feedback)	19 3rd and 4th year Psychiatry residents, Stanford university, USA	• Attitudes towards spirituality in psychiatry was initially positive • No significant change over time	–	A Process-Oriented, clinically focused approach to Teaching Religion and Spirituality in Psychiatry Residency Training Six 50-minute sessions. Brief didactics and case discussions facilitated by staff faculty. A panel of chaplains was invited for one session. Outcomes: • Significant improvement in competency of taking a spiritual history and understanding of DSM-IV diagnosis of SR problems • Significant improvement in incorporating spirituality in clinical practice
Roseman [40] 2014	Intervention	Describe a training program on SR and medicine (Qualitative feedback)	16 residents of various disciplines, Broward Health Medical Centre, University Hospital Florida University,	–	–	3 months of weekly meetings to increase awareness of spiritual and compassionate care in the medical encounter. Sessions included reflection and open discussion (“safe space”) about challenging patient encounters with guidance and tools for the

			USA			integration of spirituality and compassionate medicine into daily patient encounters. Outcomes: • The ability to share in a "safe" space allowed spiritual relationships to flourish • Participants indicated that the opportunity to talk about patient cases and share "real feelings" in small group settings was most meaningful
Ford et al. [41] 2014	Observational	Patient reports of the occurrence of RS communication and patient ratings of the quality of this communication, as well as its relationship to trainees' self-assessments of their competency in RS communication (Survey)	181 IM trainees and 541 patients with advanced medical illness under their care, USA	–	• Trainees' self-assessments of their skills in SR communication was positively associated with their patients' reports of the occurrence and ratings of SR communication	• Physician trainees rated their communication competence in discussing SR and existential issues lower than their competency in discussing medical decisions
Ledford et al. [42] 2014	Intervention	To evaluate the use of an educational innovation consisting of a teaching OSCE used as "sensitizing	28 staff and residents in FM residency, Fort Belvoir Community Hospital,	• 35.7% Protestant • 32.1% Catholic • 10.7% agnostic • 10.7% atheist	–	A teaching OSCE on SR followed by personal written reflection, dyadic guided reflection, and group reflection across three different time points

		practice," followed by personal, guided, and group reflection on SR (Analysis of qualitative data gathered from reflection activity)	Virginia, USA			where learners discussed the sensitizing practice, objectives and lessons learned. Outcome: • Residents showed progression along the stages of change with the target behavior being the physician's willingness to engage in mindful practice with patients who want to discuss SR
Doolittle et al. [43] 2013	Observational	Understand relationships between burnout, behaviors, emotional coping, and SR among internal medicine and internal medicine-pediatrics residents (Established questionnaires)	108 IM residents, Yale university, USA	• 40% considered themselves spiritual • 7% considered themselves religious • Spiritual well-being was positively correlated with personal accomplishment • Humility/personal application domain negatively associated with emotional exhaustion and depersonalization	–	–
Kattan and Talwar [63] 2013	Observational	Explore the attitudes, experiences, and comfort levels of psychiatry residents regarding SR in	45 Psychiatry residents, McGill University, Canada	• 37% Christian • 25.9% Jewish • 7.4% atheist • 3.7% Muslim • 25.9% others/unknown/none	• 71.1% agreed that spirituality is often cited by patients as related to their ability to cope with psychological distress • 75.6% agreed that	Prior training: • 38.6% had received training on spirituality • 81.3% of those who did found it beneficial • Qualitative data

		psychiatry, and examine residents' interest and past learning experiences in this area (Survey)		• 37.5% neither spiritual nor religious • 20% both spiritual and religious • 37% spiritual only • 5% religious only • 84.4% felt comfortable asking patients about their spirituality • 91.1% agreed it is appropriate to inquire about spirituality • 72.7% agreed that is important to address patients' spiritual problems or needs • 95.6% agreed that spiritual beliefs can help some patients cope with stressors • 80% agreed that that spiritual beliefs can contribute to or compound mental illness • 84.4% agreed that considering a patients' spirituality can improve treatment compliance and success • Uncertainty regarding the acceptability of self-disclosure and prayer • 24.4% had concerns regarding ethical	spiritual issues are often brought up by patients who are dying Barriers cited: • 80% insufficient time • 48.9% fear of offending patients • 48.9% insufficient knowledge/training • 31.1% general discomfort • 22.2% feared disapproval from other psychiatrists	reported that prior training "increased awareness" of the relationship between spirituality and mental health. Prior training helped increase their skills on sensitive questioning, "comfort approaching the topic" and in the "initiative to question" patients on it.

				implications of discussing spiritual issues with patients • 48.9% agreed that asking about spirituality can be too personal or offensive		
van Rensburg et al. [67] 2013	Observational	To establish how, within accepted professional boundaries, should SR be incorporated into the current model for South African practice and training (Qualitative analysis of interviews)	13 Psychiatrists from University of Witwatersrand, South Africa	–	–	Exploring, analyzing, and describing the views and experience of local academic psychiatrists on the topic of the role of spirituality in South Africa psychiatric practice and training. Training of spirituality in psychiatry emerged as one of the 6 main themes from the interview • All participants agreed that spirituality must be included in undergraduate medical and specialist psychiatric training • Suggested a mentorship vs. apprenticeship model • Core competencies are described
Campbell et al. [44] 2012	Intervention	Evaluate effectiveness of integrating SR into curriculum	Psychiatry residents, The University of South	–	–	Vertical curriculum on SR/ integrated into the general- and child-psychiatry training

		(Survey)	Carolina, USA			programs over the 12 month academic year. It included residents as teachers, didactics, case-conferences, and an interdisciplinary workshop. 80 quantitative voluntary responses collected from the curricular evaluation tools. Outcome: • 89% in the child program responded positively to the impact questionnaire • 81% in the general program responded positively to the impact questionnaire
Stuck et al. [45] 2012	Intervention	Evaluate effectiveness of an integrated psychiatry/seminary training model to enhance awareness and positive attitudes between disciplines (Survey and established questionnaires)	30 Psychiatry residents, University of South Carolina, USA Participated alongside 13 psychology interns and 41 seminary students	Seminary students: • 98% Protestant Psychiatry residents: • 59% Protestant • 16% Catholic • 7% other • 4.5% agnostic • 4.5% Hindu • 4.5% atheist • 2% Muslim Seminary students scored higher on the SWBS scale than residents Psychiatry residents	• 99% agreed that interventions of clergy and psychiatrist/psychologists should complement each other	Two 3-hour workshops involving psychiatry residents, psychology interns and seminary students to enhance awareness and positive attitudes between the disciplines. It included small group inter-disciplinary discussions, seminars, and a case presentation. Outcomes: • Psychiatry residents showed significant

				scored at the upper end of "moderate" for each of these scales • All participants had positive attitudes toward clergy		improvement in knowledge of clergy on a pilot scale • The global ratings for seminar evaluations were all "very good" to "outstanding" for both seminars. • 8/9 explicit goals of the program received "very good" to "outstanding" ratings.
Mogos et al. [46] 2011	Intervention	Evaluated the quality of spiritual care given in an ICU setting by those residents who followed a SR curriculum in comparison to those who did not have the curriculum in place (Survey)	Residents in GS, IM, Anaesthesia, University of South Carolina, USA	–	–	2-3 month curriculum that incorporates ethics and spiritual care for third year residents' rotating through the ICU. It consists of lectures, discussions, case reports, research articles, hands on and bedside training, core beliefs of various religions and spiritual practices. Outcomes: • IM and GS residents did not have a curriculum for spirituality/end of life care whereas Anesthesia did • Residents were evaluated by 30 ICU nurses using a Likert scale across 40 questions.

						• Those who followed the spiritual curriculum were able to provide better total care when compared with those residents who did not have the same spiritual training
Kozak et al. [47] 2010	Intervention	Describe the development and use of a curriculum on Religion, Spirituality and Culture in Psychiatry (Evaluation forms)	Psychiatry residents, University of Washington Psychiatry residency, USA	–	–	Curriculum over 4-year residency programme. Included didactics, rotation experiences, grand round presentations, case conferences and field experiences • Core objectives and curriculum structure are described Outcomes: • Enhanced ability to understand different cultural and spiritual perspectives • Increased comfort level in assessing SR backgrounds of their patients
Saguil et al. [48] 2011b	Observational	Compared the influence of SR research with the influence of more traditional evidence, such as that associated with pharmaceutical or	363 FM residents, USA	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS	• 96.4% were willing to discuss spirituality if asked by a patient • Spiritual wellbeing, religious affiliation and race were significantly predictive of willingness	Prior education: • 41.6% in residency • 58.7% in medical school Prior training did not influence agreement to either statement (evidence

		medical device therapy, and its ability to influence FM residents to discuss spirituality with patients (Survey and established questionnaires)		score was 97.2, a score comparable with that of many Protestant religious groups • Residents indicated that they would be more responsive to publications on traditional medical therapies than SR-related therapies • 93.9% agreed that they would be more willing to initiate SR discussions if presented with good evidence	to broach spirituality	on spirituality vs. evidence on a new medication)
Saguil et al. [49] 2011a	Observational	Explore willingness of the new generation of family physicians to discuss SR with their patients and the determinants making them more or less willing to do so (Established questionnaires)	363 FM residents, USA	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS score was 97.2, a score comparable with that of many protestant religious groups	• Denominational preference , self-rated spirituality, and spirituality instruction were significantly associated with strong agreement to discuss spirituality upon patient request • 59.8% strongly agreed, 19.8% moderately agreed, 16.8% agreed that they are willing to discuss spirituality upon patient request	Prior training: • 61.7% in medical school • 43.8% in residency Significant association between prior training and increased agreement to discuss SR upon patient request
Anandarajah et al. [50]	Qualitative	Describe how physicians sought to improve the rigor	Expert panel of 8 focusing on dual	–	–	To achieve consensus regarding spiritual care competencies tailored for

2010		of education in the field of SR though a systematic process that provided a competency-based framework for curricula development and evaluation (Modified Delphi process, external feedback)	discipline of FM and spiritual health, USA			family medicine residency training Outcomes: • 19 spiritual core competencies identified for training (6 on knowledge, 9 on skills, 4 on attitudes) that were linked to the competencies in the ACGME • 3 global competencies related to the dimension of context, patient-care and self-care identified for use in promotion and graduation criteria
Galanter et al. [51] 2011	Intervention	Describe the development of a medical-training program that integrated the role of SR into a regimen of biomedical education (Established questionnaires and qualitative analysis)	Psychiatry residents, patients, and chaplain trainees, Bellevue Medical Center, USA	• Medical trainees were less spiritual than both patients and chaplain trainees using a spirituality self-rating scale	–	Weekly spirituality group meetings open to patients. Led by psychiatry residents in rotation and spiritual teaching faculty. Patients were encouraged to discuss their own experience of spirituality and how it relates to their coping of the illness. Video recordings of their answers on why spirituality is important in their life were employed in classes for residents. Residents also received a seminar series on cultural competency Outcomes:

						• Third year residents gave the course high ratings relative to other trainings
Grabovac et al. [64] 2008	Intervention	Evaluate pilot study of a course on SR to increase both residents' understanding of clinically relevant SR issues and their comfort in addressing these issues in their clinical work (Survey and qualitative feedback)	Psychiatry residents, University of British Columbia, Canada	–	–	6-hour SR course over six sessions. Involved both didactics and case-based discussions. Outcomes: • Significant increased comfort with spiritual issues in clinical practice • Several residents were hostile toward the introduction of the course into the curriculum, reflecting the transference of personal attitudes toward spirituality to the professional context
Anandarajah and Mitchell [52] 2007	Intervention	Describe a 17-hour elective designed to improve learners' knowledge and skills regarding spirituality and patient care, and assessed learners pre- and post-intervention (Survey)	10 M4s in for the first 2 years and 8 M4s and 15 residents, faculty and staff, Brown Medical School, USA	–	–	Spirituality and medicine elective with eight 2.5-hour sessions over 4 weeks designed to improve learners' knowledge and skills regarding spirituality and patient care Outcomes: • Improvement in SR knowledge and skills

Yi et al. [53] 2007	Observational	To determine the level of self-reported health among resident physicians and to ascertain factors that are associated with their reported health, including SR (Established questionnaires)	IM, PED, IMPED, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 73% Christian • 7% Jewish • 11% other • FACIT-SP-Ex for spiritual well-being was 71.5 (0-92). • Duke religion index showed moderated organized, nonorganized and intrinsic religiosity • Self-rated overall health rating scale (0-100) was used with a mean of 87 • Lower health rating scores were associated with poorer spiritual well-being • Religion and religiosity variables were not associated with self-rated overall health	–	–
Kligler et al. [54] 2007	Intervention	Describes efforts to develop and test a set of measurement tools to assess competencies for integrative medicine that takes into account SR issues at the residency level (Scores using evaluation tools, OSCE results)	FM residents across 6 different hospitals, USA	–	Spirituality not often discussed with patients by integrative family medicine participants	Core FM program competencies are described. Tested a set of competency-based evaluation tools in integrative history taking and planning. Direct observation, written treatment plan and 2 OSCES were evaluated.

Marr et al. [55] 2007	Observational	Surveyed palliative medicine fellowship directors in the United States to learn how they teach SR, who does the teaching, and what they teach (Survey)	14 US Palliative Medicine fellowship directors	–	–	• All program directors had taught SR as part of curriculum • 12 had separate programs for teaching spirituality • 2 reported they taught spirituality but not as a distinct, separate program • Most Palliative Medicine programs agree on the content of training on spirituality, but no robust educational and evaluation methods in place • Common formats for education included small group discussion, lecture, self-study, supervision, shadowing a chaplain • No experiential (role-play etc.) education methods or evaluation
Barnett and Fortin [56] 2006	Intervention	Pre- and post-evaluation of a pilot workshop on spirituality and medicine (Survey)	79 M2s and 58 IM residents, Yale University SOM, USA	–	–	Workshop included lectures, discussion, role-play to meet objectives. Outcomes: • All participants had significantly increased scores regarding the 1) the appropriateness of inquiring about spiritual

						and religious beliefs in the medical encounter, 2) perceived competence in taking a spiritual history, 3) perceived knowledge of available pastoral care resources • Participants appreciated the opportunity to discuss and reflect upon this subject in a safe space • Common questions remaining for learners after the workshop is whether it is the physician's role to ask about spirituality, and for which patient's is it appropriate.
Yi et al. [57] 2006	Observational	Determine the prevalence of depressive symptoms in pediatric, IM, FM, and combined internal medicine-pediatric residents, and SR factors that are associated with prevalence of depressive symptoms (Survey, established questionnaires)	227 Paediatric, IM, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 73% Christian • 7% Jewish • 11% other • 10% no religious affiliation • 25% met the criteria for having significant depressive symptoms • Significant depressive symptoms were associated with poorer religious coping, greater spiritual support seeking, and worse spiritual well-being	–	–

King and Crisp [15] 2005	Observational	To determine the extent and nature of teaching on SR and health being taught in family medicine residency programs, identify perceived facilitators and barriers to SR education, and determine preferred methods of curriculum dissemination (Survey)	101 FM residencies regarding their spirituality and health care curriculum, USA	–	–	• 92% of program directors said spirituality teaching was important • Only 31% of programs have a specific curriculum • 86% reported using the current AAFP core educational guidelines Facilitating factors: • Having trained personnel (39%) • Positive attitudes toward SR (39%) Barriers cited: • Lack of time (52%) • Lack of qualified personnel (31%) • Fear/discomfort about SR (32%) • Lack of priority (14%) • Lack of available personnel (12%) Teaching methods: • 67% used lectures • 49% used clinical precepting • 44% used inpatient rounds • 25% chaplain rounds • 18% seminars

Luckhaupt et al. [58] 2005	Observational	To assess primary care residents' beliefs regarding the role of SR in the clinical encounter with patients (Survey)	247 IM, Paediatric, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 46% Protestant • 26% Catholic • 7% Jewish • 11% other • 10% no religious affiliation • 90% believed that they should be aware of their patient's SR beliefs • 46% felt that they should play a role in patients' spiritual or religious lives • 36% felt that they should ask patients about SR during office visits • 77% felt they should ask if a patient was near death • FM residents were more likely to agree with asking about patients' SR beliefs • Residents were less likely to agree with praying silently/aloud with patients than to inquire about beliefs • Residents who felt that they should play a role in patients' spiritual or religious lives participated in organized religious activity with greater	Advocating for SR involvement was associated with FM residency, spiritual well-being, positive religious coping and PGY year	–

				frequency, or had higher level of personal spirituality		
Grabovac and Ganesan [65] 2003	Observational	To determine the extent of currently available training in RS as they pertain to psychiatry (Survey)	14 Psychiatry residency programs in Canada	–	–	A survey of training currently available to Canadian residents in Psychiatry • 4 had no formal training in SR • 4 had mandatory academic lectures that provide between 1-4 hours of teaching • 9 programs offered some degree of elective, case-based supervision
Armbruster et al. [4] 2003	Observational	Identify pediatrician (faculty and resident) beliefs about SR in medicine and the relationship of those beliefs to SR behavior and experiences in clinical practice (Survey)	56 residents in Paediatrics, SSM Cardinal Glennon Children's Hospital, Saint Louis University SOM, USA	Resident religious affiliation • 85.7% Christian • 5.7% Jewish • 2.9% Muslim • 2.9% Hindu • 2.9% no religion • 90.9% of residents agreed that patient religious beliefs positively affected health • 56.8% of residents agreed that religious involvement reduced patient morbidity and mortality	• 6.8% would routinely inquire about the religious affiliation of the patient during new visits • 72% of residents would routinely inquire about the religious affiliation of the patient during health crisis or life-threatening illness Barriers cited: • Lack of time (30%) • Personal discomfort (31.8%) • Lack of training (32.6%) Facilitating factors: • Not expecting negative	• 32.6% of residents agreed that they are not adequately trained to address SR issues Facilitating factors: • Feeling capable inquiring about SR • Appropriate training with correction of misperceptions about SR in practice

				• 65% of residents agreed that religious inquiry can enhance the therapeutic relationship • 43.2% of residents agreed that they should proactively acknowledge and support patients in their existing beliefs • 50% of residents disagreed that religious issues are the province of pastoral care, not the physician • 67.4% of residents agreed that offering to pray with patients was appropriate. • 52.3% of residents disagreed that patients/families would resent unsolicited questioning about SR	patient reactions to SR inquiry and prayer • Strong belief that SR is relevant to paediatric outcomes	
Siegel et al. [59] 2002	Observational	To characterize pediatricians' attitudes toward SR in relationship to the practice of pediatrics (Survey)	65 residents in Paediatrics, Boston Medical Centre, USA	SR orientation: • 46% "not at all" or "not very strong" • 33% "somewhat strong" • 21% "strong" • 90% stated they thought it was appropriate to pray with a patient • 76% reported feeling comfortable praying with a patient if asked to do so	Strong personal SR orientation was significantly associated with positive attitudes to SR in general but was not related to reported practices • 19% say they do initiate SR discussions in clinical practice • <40% would ask SR for routine health maintenance visits	–

				• 35% stated they should initiate discussions of SR • 65% of pediatricians felt that faith plays a role in healing • 64% reported that clinician patient interaction would be strengthened by discussions of SR	• 93% would ask SR if discussing life threatening illness • 96% would ask SR when discussing death and dying independent	
Saba [60] 1999	Observational	To foster a better understanding of beliefs and values that residents bring to their clinical practice (Qualitative analysis)	143 FM residents, University of California, San Francisco, USA	• Philosophical or spiritual frameworks were central to how residents viewed human existence, health and illness, and their role as a physician, and meaning to uncertain/painful events in their work • 63% described their beliefs/values to reflect formal philosophical or religious traditions • 85% explained that their desire to become a physician was rooted in a sense of mission or calling	–	–
Oyama and Koenig [61] 1998	Observational	To determine whether the religious beliefs and behaviors of family medicine	31 FM faculty and residents, North Carolina and Texas, USA	–	Religious backgrounds, beliefs and behaviors of physicians and residents were different from	–

		outpatients differed from those of their physicians and whether patients' religiousness affects their expectations of their physicians regarding religious matters (Survey)			patients. They may not realize the importance of religion to patients or the need to address these issues.	
Waldfogel et al. [62] 1998	Observational	Explore RS beliefs of psychiatry residents and the didactic and supervision experience of the residents regarding RS issues (Survey)	121 Psychiatry residents, various US Universities	• 29% Catholics • 28.9% Protestant • 12% Jewish • 14% other • 77% believed in God • 68% reported that religion is important in their lives • 74% believed that religion can help solve personal problems • 49% prayed weekly • 22% attended religious services weekly • 49% reported their religious beliefs affected their choice of medicine • Residents' religious affiliations was significantly related to their choice of medicine as a career	• 25% reported weekly encounters with patients with clinically significant SR issues • 86% rarely discussed own religious beliefs with patients	Prior training: • 27% reported that religion was discussed during didactic training as a resident • 39% of PGY3 to PGY5 reported that religion was discussed during supervision Facilitating factors: • Having exposure to SR through didactics or supervision was significantly associated with feeling competent to address SR issues, and feeling that SR is important in the clinical setting

				• 84% felt "somewhat to very competent" in their ability to recognize and attend to a patient's SR issues • 9% agreed that it is acceptable to pray with patients • 12% believed that it was acceptable to reveal their religious convictions in a clinical setting • 41% agree that religion is important in the clinical setting		
Sansone et al. [14] 1990	Observational	Explore the effects of religious ideation on the administrative and educational aspects of training programs, and the current pedagogical approach to religion in psychiatry education. (Survey)	276 Program Directors in Psychiatry, USA	–	–	• 68.1% rarely or never had a course on any aspect of religion • Didactic instruction on any aspect of religion was infrequent • Clinical supervision on SR more likely to occur than didactic instruction

Abbreviations: AAFP = American Academy of Family Physicians, ACGME = Accreditation Council for Graduate Medical Education, ADSAs = Medical School Associate Deans for Student Affairs (ADSAs), CME = Continuing Medical Education, FACIT-SP-Ex = Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being, Expanded version, FM = Family Medicine, GME = Graduate Medical Education, GS = General Surgery, ICU = Intensive Care Unit, IFM = Integrative Family Medicine, IM = Internal Medicine, IMPED = Combined Internal Medicine Pediatric, MBI = Maslach Burnout Inventory, PED = Pediatrics,

PGY = Post-Graduate Year, SR = Spirituality and Religion, SC = Spiritual Care, SIBS = Hatch Spiritual Involvement and Belief Scales, SOM = School Of Medicine, SWBS = Spiritual Well-being Scale, UME = Undergraduate Medical Education

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Figure legend: Figure 1. PRISMA flowchart of reviewed studies related to spirituality and religion (SR) in residency

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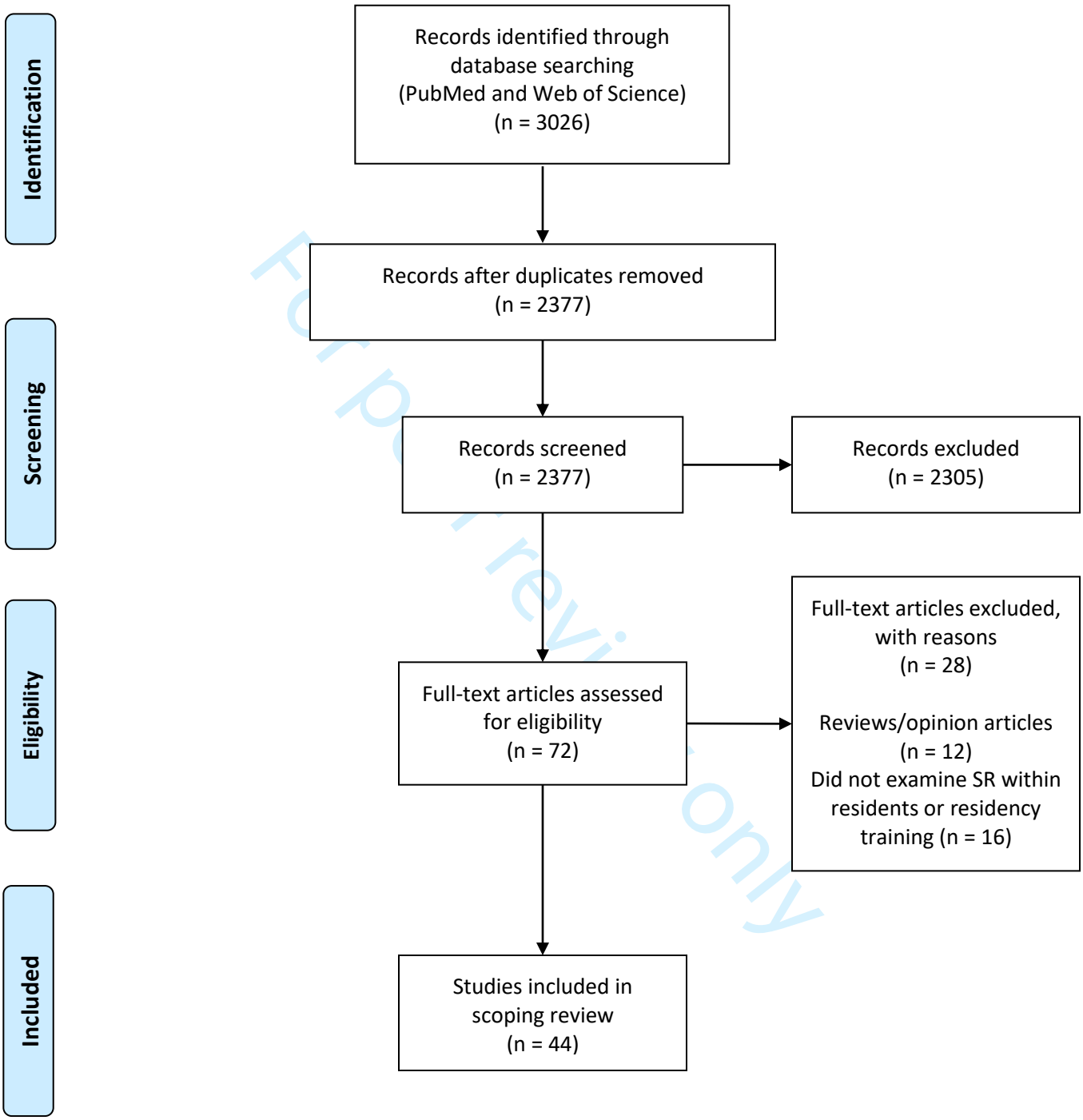

Figure 1. PRISMA flowchart of reviewed studies related to spirituality and religion (SR) in residency

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

1Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2-3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	-
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6-7
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6-7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	7
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	-

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	8, Fig. 1
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	8
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	-
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	8-15
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-15, Table 1
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Table 1, 15-16
Limitations	20	Discuss the limitations of the scoping review process.	18-19
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	19
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	53

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

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Title: Spirituality and Religion in Residents and Inter-relationships with Clinical Practice and Residency Training: A Scoping Review

Running head: Spirituality and Religion in Residency

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Abstract

Objectives: With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for the physician to address issues related to spirituality and religion (SR) during clinical consultations with patients. In light of the clinical need to improve SR-related training in residency, this review sought to examine the extant literature on the attitudes of residents regarding SR during residency training, impact on clinical care and psychological well-being of residents, and SR-related curriculum implemented within various residency programs.

Design: A scoping review was conducted on studies examining the topic of SR within residency training up until July 2020 on PubMed/Medline and Web of Science databases. Keywords for the literature search included: (Spirituality OR Religion) AND (Residen* OR "Postgraduate Medicine" OR "Post-graduate Medicine" OR "Graduate Medical Education").

Results: Overall, 44 studies were included. The majority were conducted in North America (95.5%) predominantly within Family Medicine (29.5%), Psychiatry (29.5%) and Internal Medicine (25%) residency programs. While residents held positive attitudes about the role of SR and impact on patient care (such as better therapeutic relationship, treatment adherence, coping with illness), they often lacked the knowledge and skills to address these issues. Better spiritual well-being of residents was associated with greater sense of work accomplishment, overall self-rated health, decreased burnout, and depressive symptoms. SR-related curricula varied from standalone workshops to continuous modules across the training years.

Conclusions: These findings suggest a need to better integrate appropriate SR-related education within residency training. Better engagement of the residents through different pedagogical strategies with supervision, feedback, reflective practice and ongoing faculty and peer support can enhance learning about SR in clinical care. Future studies should identify barriers to SR-related training and evaluate the outcomes of these SR-related curriculum including how they impact the well-being of patients and residents over time.

(296 words)

Keywords: Spirituality; Religion; Residency; Medical Education; Curriculum

Strengths and limitations of this study:

- There is a paucity of studies that examines spirituality and religion (SR) in the context of residency training
- This review was conducted to examine SR-related attitudes in residents, how it translates to clinical practice, as well as the adequacy of SR training in residency, with findings that would be generalisable to all relevant training programs
- There was a lack of cultural diversity in the studies included in the review, with most originating in the West.
- There was inadequate evaluation of the barriers and clinical outcomes concerning SR-related training in residency both in the short and long term.

INTRODUCTION

The distinct boundary between medicine and religion has been apparent since the advent of "reason-oriented scientific thinking", which is related in part to the notion that rational thinking in the sciences is incompatible with faith based reasoning in spirituality and religion (abbreviated as SR).[1, 2] Spirituality has been defined as the "dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationship to self, family, others, community, society, nature, and the significant or sacred.[3] Spirituality is expressed through beliefs, values, traditions, and practices".[3] Religion is seen as a specialised category of spirituality reflected by the institutionalized expression of shared beliefs, values, experiences, doctrines, traditions, and faith by a community of like believers, and usually involving a ritual.[4] In an effort to establish themselves as distinct scientific undertakings, it was necessary for disciplines such as psychiatry and behavioral sciences to distance themselves from religion.[5] Sigmund Freud, the founder of psychoanalysis described spiritual experiences as a "universal obsessional neurosis", a form of "pathological thinking in need of modification".[2, 6] However, since the 1980s, there has been some literature to support the positive influences of SR on the physical and psychological well-being of individuals.[7, 8] With the increased emphasis on personalized, patient-centered care, there is now greater acceptance and expectation for physicians to address issues related to SR during clinical consultations with patients.[3, 9, 10] In palliative and oncology specialties, some have advocated an expansion of the "biopsychosocial" framework in the formulation of clinical care for each patient to that of a more wholistic "biopsychosocial-spiritual" model.[11-13] However, the incorporation of SR into residency training has not necessarily caught up with this clinical

need; and at present, teaching in SR has not been consistently and appropriately integrated into the training curriculum.[14, 15]

Based on extant literature, the majority of patients wanted physicians to be aware of their SR and appropriately address issues related to SR.[16-20] However, physicians seldom incorporated discussion of these issues into their practice.[21-23] One of the most commonly cited barriers to discussing SR by physicians is lack of training.[21, 22, 24] A previous review amongst practicing physicians found that prior training on SR related issues was the strongest predictor for providing clinical care which incorporates considerations of SR in patients.[21] Thus, there is a need to examine the prevailing knowledge, skills and attitudes regarding SR amongst residents in training as well as appropriate SR-related curriculum that have been incorporated within residency training.

In light of the clinical need to improve SR-related training in residency and the paucity of existing reviews consolidating prevailing attitudes and practices regarding SR, we sought to conduct a scoping review, specifically focusing on three main levels (personal, clinical, and training). We were interested to understand how residents viewed SR on a personal level and how this affected them psychologically. We also wanted to know how these views could interact with clinical practice. Lastly, we were keen to understand the extent to which SR has been successfully incorporated into residency training.

MATERIALS AND METHODS

A scoping review is useful in exploring the literature broadly to identify the evidence available on a particular topic.[25] This scoping review was directed in agreement with the methodology of the Joanna Briggs Institute for scoping reviews.[25] We followed the six steps of Arksey and O'Malley methodological framework for conducting scoping reviews updated by Levac et al. to guide the process.[26] The first step involves identifying the main research questions our review hoped to address. They are as follows:

1) How do residents view SR on a personal level? (Attitudes towards SR in clinical practice, amount of knowledge they have on SR and extent to which they feel confident in addressing SR-related issues, how their personal SR affects their well-being)
2) How does SR in residents interact with clinical practice?
3) How has SR been incorporated in residency training, and to what extent has this been successful or helpful?

The second step involves identifying relevant studies. We searched the PubMed/Medline and Web of Science databases for relevant studies that examined issues relevant to SR within residency training from database inception until July 2020. Keywords for the literature search included: (Spirituality OR Religion) AND (Residen* OR "Postgraduate Medicine" OR "Post-graduate Medicine" OR "Graduate Medical Education"). The inclusion criteria are as follows: a) sample must include those in residency training, b) article must examine issues relating to residents' SR at a personal level, and/or its influence on clinical practice, and/or SR in residency training, c) article must be published in English. Studies were excluded if a) they were

systematic reviews, case reports, opinion articles, or dissertations, b) focused only on undergraduate medical students, or c) discussed SR issues only from the perspective of the patient or caregiver.

The third step involves study selection. We manually screened the abstracts of identified reports to ascertain whether they met the inclusion criteria, then reviewed full reports of promising studies. Two independent reviewers simultaneously screened the titles and abstracts. In case of any inconsistency between reviewers, the disagreement was resolved by a third reviewer.

The fourth and fifth steps involve charting, collating, summarizing, and reporting the results. For each included study we extracted variables including the characteristics of subjects, the type of residency program and the salient findings. The preceding data was organized within digitalized spread sheets and then summarized into a table to help facilitate critical assessments and for independent consideration by readers. The results were grouped into the three main areas of interest, namely 1) the personal aspect of SR, 2) SR in clinical practice, and 3) SR training in residency as far as was possible. Nonetheless, there were overlaps noted between themes two and three, particularly in the area of barriers and factors that facilitated the discussion of SR in clinical practice. Studies were classified as intervention studies if they sought to evaluate the impact of any SR-related training in residency. Those seeking to examine the attitudes, behaviours, or skills of residents in relation to SR issues would be classified as observational studies. The preferred reporting items for systematic reviews (PRISMA) flowchart for this review is shown in Fig.1.[27] Patients or the public were not involved in the design, or conduct,

or reporting, or dissemination plans of our research. As the aim of our scoping review was to provide an overview of the topic of RS in residency, a formal assessment of the quality of studies was not performed, as is typical with most scoping reviews.[25]

[Figure 1 near here]

The sixth step involves consultation with both residency faculty and residents. Findings of this review will be shared at meetings. Opportunities for obtaining suggestions to incorporate RS training into residency and for exchange of ideas will be provided.

Patient and Public Involvement

No patient involved.

RESULTS

Table 1 summarises the main findings from the 44 studies included in this review. Most of the studies were conducted in the USA (39/44, 88.6%),[4, 5, 14, 15, 28-62] and 3 were from Canada,[63-65] 1 from Denmark,[66] and 1 from South Africa.[67] Of the 44 papers, 24 (54.5%) reported data related to Theme 1,[4, 5, 28, 29, 31, 32, 35, 36, 38, 39, 42, 43, 45, 48, 49, 51, 53, 57-59, 60, 62, 63, 66] 18 (40.9%) reported data related to Theme 2,[4, 5, 28, 29, 31, 32, 35, 36, 41, 45, 48, 49, 54, 58, 59, 61-63] and 35 (79.5%) contained data related to Theme 3.[4, 5, 14, 15, 28-31, 33-37, 39-42, 44, 45, 46-52, 54-56, 62-67] In terms of specialties included, the most frequent were Family Medicine (13/44, 29.5%), Psychiatric (13/44, 29.5%), and Internal Medicine (11/44, 25.0%) residency programs.

Theme 1: Personal aspect of SR in residents

Most psychiatry residents held positive attitudes towards the importance of addressing SR within psychiatric care.[5, 35, 39] The majority of residents agreed that a patient's beliefs in SR is an important component of compassionate care,[5, 35, 36, 63] and can affect the health status of patients.[5, 28, 31, 56, 63] Most residents believed that the beliefs of patients regarding SR are important considerations during formulation of treatment plans, especially in conditions such as depression, addictions, complicated grief and end of life care.[5, 63, 66] Residents agreed that an understanding of SR-related issues can improve the adherence and success of a treatment plan,[4, 31, 63] and more than 80% agreed in some studies that a patient's beliefs regarding SR can help patients cope better with their illness.[35, 31, 63] Residents also believed that a physician's own spiritual or religious beliefs can in turn affect patient care[5, 28, 56, 63, 66] and that the discussion of SR-related issues can further strengthen the therapeutic relationship.[4, 59, 63]

There was some uncertainty about how the topic of SR should be broached during clinical encounters. Although many residents felt it was appropriate to discuss spiritual or religious concerns with patients,[28, 31, 48, 49, 56, 63] others felt that topics related to SR were too personal to ask, or had ethical concerns about raising such a topic during clinical encounter for fear of influencing the beliefs of patients regarding SR.[31, 63] Most residents agreed that self-disclosure of one's own beliefs about SR without permission of the patients was inappropriate.[61, 62, 63] In addition, there was uncertainty regarding who should initiate discussion about issues related to SR,[4, 5, 59] how routinely it should be asked,[4, 5, 36] and

under what circumstances.[36, 58, 59] When illness was serious or near the end of life, 70-90% of residents surveyed believed it was appropriate to ask, especially within Family Medicine residents.[58, 59]

In terms of praying with patients, there were inconsistent findings. While two pediatric studies found that a relatively high proportion of residents (>60%) believed that it was appropriate to pray with a patient,[4, 59] other studies reported reservations within the residents.[31, 34, 63, 58, 61, 62]

Residents in several studies agreed that chaplains and clergy were valuable and integral to patient care,[4, 5, 28, 45] but the coordination between the chaplains and treatment team in managing discussion about SR-related issues needs to be further examined.[4]

Most residents had some religious preferences,[28, 59] and at least half would describe themselves as "spiritual", "religious" or both.[31, 35, 38, 63] In one study, more than 70% believed in God, reported that religion is important in their lives, and believe religion can help to manage their personal problems.[62]

Residents scored moderately high on a spiritual well-being scale[45, 49, 53] and religiosity scales.[45, 53] Conversely, other studies showed that the majority of residents did not attend religious services more than a few times a year and less than 30% agreed that they carried their religious beliefs into their daily life.[28, 62, 32] The frequency of prayer varied across different studies.[32, 61, 62]

Personal religiosity and self-rated spirituality correlated positively with residents' willingness to discuss issues related to SR with patients,[29, 48, 49, 58, 59] collaborate with the clergy,[29, 59] and their perceived importance of SR in patient care.[29, 59] Residents that used positive religious coping in their own lives were significantly more likely to initiate SR-related inquiry with their patients.[58] In a pediatric study, residents with higher religiosity scores received better perceived communication scores from adolescent patients.[32]

In terms of correlations with the psychological well-being of residents, residents with higher total scores on the Hatch Spiritual Involvement and Beliefs Scale (SIBS) had a greater sense of accomplishment in their work.[38, 43] The humility/personal application domain of the SIBS, which relates to the theme of relational quality, was negatively correlated with burnout.[43] Of note, the External Practices domain of the SIBS scale (e.g. church going) was not significantly associated with burnout.[38, 43] Poorer scores on spiritual well-being was also associated with lower self-rated overall health.[53] In addition, poorer spiritual well-being scores, religious coping and greater spiritual support seeking were associated with depressive symptoms.[57] Some residents related their beliefs regarding SR with a sense of mission or calling in their practice,[60] and in one study almost half of the respondents reported that their religious beliefs influenced their choice of medicine as a career.[62]

Theme 2: SR in clinical practice

In terms of practice,[4] conducted a study on pediatric faculty and residents and found that while few residents routinely inquired about SR-related beliefs, this figure increased to 72% in the case of a health crisis or life-threatening illness.

In terms of the frequency of clinical encounters, around 70% of residents reported 'rarely if ever' being asked by a patient or family to discuss SR-related issues or pray.[4] An earlier study[62] found that 25% of psychiatry residents reported meeting patients with issues related to SR at least once a week, 30% monthly, and 44.5% rarely in their experience. Less than 15% of these residents reported discussing their own religious beliefs with patients at least once a month.[62] Another study of Internal Medicine residents found that 85% reported making at least one chaplain referral in the last month during inpatient service.[36] Those who were more likely to engage in routine inquiry about SR issues were residents who did not expect negative patient reactions, believed strongly that addressing SR-related concerns was relevant to treatment outcomes, and felt more capable with inquiring about SR-related issues.[4]

There were several barriers noted towards addressing SR-related concerns during clinical encounters. The most common barrier was insufficient time during clinical encounters.[4, 31, 35, 36, 63] A longitudinal study found that while skill-related barriers to discussing SR issues decreased with time and training, structural barriers such as time remained.[35] Other commonly mentioned barriers included concern about offending patients, insufficient training/knowledge, general discomfort and disapproval by peers.[4, 31, 35, 36, 63]

Theme 3: Residency training

Amongst several relevant studies, more than 40% of the residents had received prior teaching regarding SR-related issues in medical school.[28, 30, 48, 49] Prior training was associated with greater self-reported competency,[62] more positive attitudes towards SR,[49, 62] and increased likelihood to engage in routine inquiry about SR-related areas during patient encounters.[4]

The majority of residents lacked knowledge on the SR-related concerns of patients,[28] the role of clergy/clinical chaplains[28, 35, 45, 56] and the availability of spiritual assessment tools.[35, 36] When asked, residents were not satisfied with their current knowledge and skills regarding spirituality, [41] with approximately 50% of residents feeling inadequately trained to address the SR-related issues of patients.[4, 63] In addition, residents varied widely in terms of the level of comfort and self-reported competency in addressing SR-related care issues. For example, some studies noted low self-reported competency of residents in taking a spiritual history,[5, 28, 41, 56, 66] formulating an action plan, and reflecting upon one's own existential/spiritual values brought into the consultation.[66] However, other studies found that residents were comfortable when it came to discussing SR issues with their patients[31, 36, 62] and incorporating SR considerations into a management plan.[31]

Several papers surveyed program directors on the inclusion of SR-related curriculum in training[14, 15, 55, 65] and described the development of core competencies or evaluation tools for SR-related curriculum in residency training.[50, 54, 67]

In terms of the presence of SR-related curriculum, there was wide variation in terms of the incorporation of specific teaching on SR within residency training programs. Sansone's 1990 nationwide survey of US psychiatry programs reported that only 12% of programs had any teaching on SR in residency.[14] In Canada, only four of 14 programs that responded had mandatory academic lectures that provided between 1-4 hours of teaching.[65] For Family Medicine residency programs in the US, a previous study found that 31% of the programs had a specific curriculum, averaging 6 hours long.[15] In comparison, another study examining Palliative Medicine residency programs in the US showed that 12 out of 14 programs had incorporated separate teaching on SR in their curriculum although few had robust educational and evaluation methods in place.[55]

The nature of SR related curriculum included one-off workshops,[29, 56, 66] continual modules over months,[52, 64] and curriculums spanning across the years of residency. The latter was seen in Psychiatry,[5, 44, 47] Family Medicine,[35] and Internal Medicine[28] residency programs. Most studies used simple pre/post surveys for evaluation, with very few interventions incorporating frequency of SR inquiry,[39] patient feedback and long-term effects of curriculum[35] into evaluation outcomes.

In terms of the pedagogical methods, common formats included lectures,[28, 47] small group discussions,[45] and case presentations/conferences.[5, 47] Several studies described an inter-professional approach that integrated the teaching of SR within chaplain and clinical

rounds.[35, 37] Others methods included the use of reflective writing,[33] OSCE,[42] theatre improvisation and role play[66] to teach SR within resident training.

From a curriculum planning point of view, the reported barriers for incorporating SR training into curriculum included finding adequate timeslots within training curriculum, and the lack of trained personnel.[15, 30]

DISCUSSION

Our review found that residents in training recognized the importance of addressing SR-related concerns in patient care,[28, 31, 56, 63] and acknowledged that it can strengthen the therapeutic relationship[4, 59, 63] and impact positively on treatment adherence and clinical outcomes.[4, 31, 63] However, in practice, SR-related issues were infrequently addressed.[4] This can be attributed to several factors. Firstly, there is lack of knowledge and training about what to ask regarding SR as was reported in several studies.[4, 28, 41, 63] Secondly, there is personal discomfort for some residents which may be related to a sense of inadequacy in addressing SR-related issues, concerns about negative responses of patients or ethical concerns about raising such a topic during clinical encounters.[31, 63] Thirdly, pressure of time during clinical encounters may not allow this area to be addressed.[31, 63] Fourthly, the frequency of inquiry seemed to be dependent on clinical context. For example, residents indicated that they were more likely to ask about SR-related issues during end-of-life situations.[4, 5, 59] This could

be related to patients themselves initiating the topic or residents believing that discussion about SR is more appropriate during end-of-life settings. Residents scored moderately high on a spiritual well-being scale[45, 53] with more than half considering themselves to be either spiritual or religious.[63] Increased scores on spiritual well-being was associated with better self-rated health, less burnout and less depressive symptoms.[38, 43, 53, 57] These findings were consistent with findings amongst other populations. A study of medical students reported significant inverse correlations between measures of spirituality and measures of psychological distress/burnout.[68] Similar associations have been found among physicians in oncology and palliative medicine.[69, 70] In turn, residents who had stronger personal beliefs regarding SR were more willing to discuss SR-related areas with their patients[29, 48, 49, 58, 59] and perceived that addressing such concerns had a positive impact on patient care[29, 59] Those who used positive religious coping mechanisms were also significantly more likely to pray with patients and ask about their religious beliefs.[58] This is consistent with studies which found that physicians with higher religiosity scores were more likely to discuss SR-related issues with patients, believe that addressing SR-related concerns strongly influenced treatment outcomes; and consider the influence of SR in positive rather than negative ways in their clinical practice.[71, 72]

SR is an important part of clinical care, and its successful integration is dependent on the physician's self-awareness of his/her own SR, as well as the careful delineation of professional and personal boundaries when handling SR issues during clinical encounters. Respecting the patient as an individual and providing holistic care involve taking into account their SR beliefs while also being mindful of the possibility of coercion due to the power differential that is

inherent in the physician-patient relationship.[73] Although the pressure to blur the boundaries between the professional and personal sphere often comes from patients, research suggests that many patients desire to have prayer as an adjunct to conventional medical treatment rather than an alternative or substitute.[73] This indicates that many patients are aware of the need for medical treatment, and physicians should be cautious of swinging to either extreme by unintentionally touting RS practices as a cure for diseases, or being dismissive of patients who appear to be strongly religious/spiritual. Hence, there is a need to enhance the physician's self-awareness of such boundaries and to train them on ways to navigate discussions on SR with sensitivity from the beginning of residency. In addition to these aims, healthcare professionals should also be encouraged to approach issues of SR with the aim of empowering the patient.[74] By assuming the role of a spiritual advocate, physicians can promote patients' moral agency and maintain the centrality of patients' concerns throughout the course of illness and treatment.[74]

In terms of curriculum, pedagogical modules related to SR were more commonly found in palliative medicine residency programs[55] than other residency programs. This could reflect the increased severity of illness and end of life scenarios seen in palliative medicine,[75] greater willingness and acceptance of patients and clinicians to address topics related to SR,[76] or even the desire of residents to optimize the care and management of patients during the course of their illness. Interventions described were largely one-off workshops with only a few incorporated within the existing training curriculum. The most common pedagogical methods included didactics, small group discussions and case presentations.[35, 47] Other pedagogical methods that can be used to better engage and equip the residents include involvement of an inter-professional team members such as chaplains if available,[37] discussion groups with

patients,[51] written reflection,[33] and role play.[66] Thus far there have been few formal evaluations[35, 39] of the effectiveness of such SR-related curriculum in engendering better patient evaluation, care, and support through patient and resident feedback channels.

There are several practical implications from this review. First, there is a need to facilitate the appropriate inclusion of SR-related topics into the residency curriculum and clinical assessment so that there is congruence between teaching and clinical practice. Frameworks such as the FICA (Faith, Importance, Community, Address)[77] or HOPE (Hopes, Organised religion, Personal spirituality and practices, Effects on medical care)[78] can be introduced early into training to help residents incorporate SR discussion into their clinical practice. With early training, residents would be better prepared to deal with such topics competently and with sensitivity regarding the diverse beliefs of patients during clinical encounters. Second, to engage the residents in training through different pedagogical strategies in view of the constraints of time. This could include blended and hybrid learning, a combination of didactics and case discussions to expand exposure, involvement of chaplains, and discussion groups with patients to highlight relevance of addressing SR issues in training. In addition, role play within the group can help residents in their practice of SR-related acquired skills and tools before actual patient encounters. Third, to reflect on patient encounters involving SR and consider the challenges faced and possible improvements to the approaches used. Fourth, to support resident efforts when they encounter challenges through faculty supervision, feedback and peer support. In the context of greater interdisciplinary collaboration in patient care, the issue of whether the physician or chaplain should take the lead in addressing SR would have to depend on an understanding of the background and needs of the patient, rapport of the patient with the

members of the multidisciplinary team, comfort and SR related competency of the physician and wider system factors such as institutional and cultural norms.

This study has several limitations. Firstly, the papers reviewed are limited to the West save for one study done in South Africa. It would be important to encourage studies from different parts of the world as it is likely that different cultures and belief systems would influence approaches toward addressing SR-related issues in residency training and practice. Second, few studies reported on quantitative measures related to SR in training and clinical care such as the frequency of resident-initiated and patient-initiated inquiries related to SR, or SR-related discussions across different clinical circumstances. Third, few studies evaluated the long-term outcomes of teaching SR-related issues during resident training. Thus, future studies may want to examine areas such as patient well-being, resident well-being, perceived learner satisfaction and long-term outcomes following interventions to incorporate SR in residency training.

CONCLUSION

In conclusion, we found that while residents acknowledged the benefits of addressing SR-related issues during clinical encounters, they varied in terms of their level of comfort in addressing these areas. Possible contributory factors included lack of knowledge, constraints of time, personal beliefs about SR and prior training. Several practical considerations were suggested such as the intentional and appropriate inclusion and integration of SR related topics into the training curriculum and better engagement of learners through varied pedagogical strategies.

Table 1: Summary of the main findings related to Spirituality and Religion (SR) in relevant studies within Residency Training

Author/year	Type of study	Aims of study (Assessment method)	Participants and residency program	Theme 1: Personal aspect of SR in residents	Theme 2: SR in clinical practice	Theme 3: Residency training
Piscitello & Martin [28] 2019	Intervention	Residents' knowledge, attitude, and skills regarding SR pre- and post-intervention (Survey)	123 IM residents PGY 1-4, University of Chicago, USA	• 96% agree that a patient's SR can affect their health • 70% believe a physician's SR beliefs can affect patient care • 76% thought it is appropriate to discuss SR concerns with patients • 94% believe chaplains are valuable in patient care • 22% Roman Catholic • 13% Judaism • 11% Protestant • 9% Hinduism • 4% Islam • 69% had a religious preference • 62% attended religious services at least once a year • 18% agreed with the statement "I try hard to carry my religious beliefs into all other dealings in life"	• 53% have discussed SR concerns with patients • 42% reported having prayed with a patient during residency training	• 57% had knowledge about the role of chaplains • 4% had knowledge about type of training chaplains receive • 33% lacked knowledge in spiritual concerns at the end of life • 24% lacked knowledge on religious rituals requested • 15% felt competent to take a spiritual history 3-part series over 1 year to increase resident knowledge on how SR and medicine affect patient health, increase the understanding of the role of chaplains and increase resident comfort in spiritual history taking Included lectures, discussion groups, and a panel of experts Outcome: • Knowledge of

						chaplains increased • No other changes in SR knowledge, attitudes or skills Prior education: • 40% received education in SR in medical school • 7% in residency
Kelley et al. [29] 2018	Intervention	Residents' approach to treating African-American Christian patients pre- and post-intervention (Survey)	51 Psychiatry residents at Western Psychiatric Institute, USA	• 37.8% Christian • 18.5% other religions • 13.5% atheist • 16.2% agnostic	Personal religiosity positively correlated with: • Willingness to discuss SR • Willingness to collaborate with clergy • Perceived impact of religion	4-hour collaborative workshop involving community based clergy designed to: • Improve attitudes toward the role of religion in mental health for African American Christians, • Increase comfort in talking with patients about spirituality • Increase willingness to involve clergy in team approach. It included a didactic session, small group case-based discussions and a panel discussion Outcome: • More comfort in discussions with patients about SR • Greater willingness to collaborate with clergy

						• Greater importance of religion to mental health
Hvidt et al. [66] 2018	Intervention	Develop and evaluate a course program in existential communication targeting general practitioners (Survey)	14 practicing General Practitioners and 5 residents in training from one Danish region, Southern Denmark	• 47% are 'believers'	–	8 hour vocational training/CME course on existential communication (cancer patients) Three parts: theoretical input, group/self-reflection, communication training (theatre improvisation with case studies) Outcome: • Participants showed increased self-efficacy in SR communication, working on their own barriers and self-reflection of existential/spiritual values brought into consultation • Increased perceived importance on communication about SR concerns • 89% felt improvements in communicating existential issues • Qualitative data showed beneficial self-reflective processes

Rosendale and Josephson [30] 2017	Intervention	Understand the current prevalence and need for cultural responsiveness training among program directors of neurology programs (Survey) Evaluate pre- and post-training outcomes (Survey)	Needs assessment: 47 (36%) program directors of academic Neurology programs nationally, USA	–	–	Prior training: • 17% no formal training • 54% some training in college • 54% monthly or more frequent training in medical school Barriers to formal training: • Time • Lack of expertise • Lack of educational materials Needs assessment: 65% of neurology programs did not have formal diversity curriculum training Integrated diversity curriculum pilot: Six 1 hour weekly lectures covering ethnicity, language, religion, sexual orientation, gender identity/expression, SES Included lectures, religious leader panel discussion, grand rounds Outcome: • Most residents felt strongly that formal training in cultural responsiveness was important

Gattari et al. [31] 2018	Observational	Examine attitudes of residents in relation to SR in patient care (Survey)	22 third year medical students, 12 Psychiatry residents, 7 attending psychiatrists, Wayne State University School of Medicine, USA	• 66.7% religious, spiritual, or both • 87.8% agreed that it was important to inquire about SR • 92.7% felt that considering SR of patients can improve compliance and success to the treatment plan • 87.8% felt that SR helps their patients cope with distress • 26.8% felt religion was too personal to ask • 31.7% had ethical concerns about discussing SR	• 29.3% would pray with patients • 97.6% would consider SR when making management plan • 75.6% felt comfortable asking about SR issues • 82.9% felt comfortable addressing patients' SR problems or needs • 97.6% felt comfortable considering patients' cultural community and practices when formulating a treatment plan Barriers to discussing SR: • 63.4% insufficient time • 51.2% concerned about offending patients • 46.3% general discomfort • 12.1% disapproval by peers	• 56.1% felt they had insufficient training/knowledge Prior training: • 22.7% for medical students • 41.7% for residents
Woods and Hensel [32] 2018	Observational	Assess residents' SR in relation to self-efficacy and communication with patients during adolescent clinic visits (Established questionnaires)	46 residents in Paediatrics rotating through the adolescent clinic from August 2013 to August 2014, USA 364 patients	• 32% Christian-catholic • 26.1% no religious affiliation • 23.9% Christianity (protestant) • 36.9% attend religious services a few times a year 26.1% at least once a month, 19.6% never	Residents with higher religiosity received better perceived communication scores from patients. Residents that were protestant or 'other' received better communication scores than those that were Catholic	–

			seen by residents in adolescent clinics	• 58.7% rarely or never prayed • 60.8% disagreed that they tried hard to carry religion into their daily life • Majority of residents did not feel any of the terms on the spirituality questionnaire applied completely to their body		
Vicini et al. [33] 2017	Intervention	Introduced reflective writing into a family medicine residency to nurture self-development without using it as an assessment method (Qualitative analysis of written reflections)	Family Medicine residents from Tufts University SOM, USA	–	–	15 minutes of reflective writing three times a week as part of medical residency curriculum to help residents explore their inner lives. Residents wrote reflections about their experiences with patients. Themes of reflective writing: • Longings and desires • Self-doubt • Helplessness • Existential questions Outcome: • Residents saw value in self-reflection • Expressed desire for group discussions to

						normalize their thoughts and feelings with their peers
McGovern et al. [5] 2017	Intervention	Assess the impact of incorporating SR into the curriculum (Survey)	12 Psychiatry residents from Texas Tech University of Health Sciences Center, USA	• 33% Christians • 33% Hindus • 25% Muslims • 8% agnostic • 85.7% believed that psychiatry should not distance itself from SR • 71.4% believed that appreciating their own spirituality would be helpful in patient care • Large majority of residents agreed that managing spiritual concerns are important in the treatment of suffering, depression, end of life care, addictions, guilt, and complicated grief	• 78.6% agreed that knowledge of spirituality enhanced clinical competency • Mixed response if spirituality should be assessed on a regular basis • 42.8% agreed that discussion of SR issues should be initiated by patients • 85.7% agreed that awareness of patient spirituality facilitates compassionate and competent care • 71.4% agree that assessment of patient's spiritual needs improves treatment planning and outcomes	• 38.4% agreed, 30.8% disagreed, 30.8% not sure that they were able to take a spiritual history • 92.8% agreed that training enhances one's skills to communicate about spiritual matters Spirituality training was incorporated into the existing 3 year curriculum. Included didactic experiences in seminars, clinical and other training experiences (including spirituality dinners). Evaluation was done using the SARPP survey to measure spirituality awareness. Outcome: • 46% report increased awareness and integration of spirituality into their clinical practice • 69.2% considered the curriculum to be

						meaningful • 92.3% feel that it has improved their clinical expertise with issues of spirituality
Leong et al. [34] 2016	Intervention	Knowledge of clinically relevant Islamic teachings regarding end-of-life care in palliative care physicians pre- and post-educational intervention (Survey)	14 Palliative Medicine clinicians including attendings, fellows, residents and nurse practitioners, USA	–	–	1 hour educational intervention with a Muslim chaplain with Q&A Outcome: • Knowledge of clinically relevant Islamic teachings regarding end-of-life care improved significantly after intervention • Intervention was well-liked and clinically useful
Anandarajah et al. [35] 2016	Intervention	Immediate and long-term effects of a required, longitudinal, residency SC curriculum, which emphasized inclusive patient-centered SC, compassion, and spiritual self-care (Surveys administered pre-, immediately post-, and eight years post-intervention)	26 FM residents, New England, USA 13 received intervention, 13 did not receive any curriculum 49 transcripts analyzed over the 8 year study Qualitative interviews	• Control and Intervention group had similar religiosity and religious affiliations • Majority Christian • Majority either spiritual or religious • Physicians held positive attitudes toward spirituality in patient care • All residents pre-intervention endorsed the role of spirituality in	• Structural barrier (lack of time) cited	Prior training: • Most had no prior SR coursework 24 hours of spiritual care curriculum over 3 years, with pedagogical methods including didactic sessions, small groups, direct clinical care, and experiential and reflection activities. • For untrained groups, self-assessment of knowledge and skills depended on the

			done 3 times over 10 years for intervention group, 1 time for control.	patient care as "one of the biggest ways people deal with their illness". • All endorsed a relationship between spirituality and compassionate patient care.		importance of spirituality in their own lives • Clinical approach to spiritual care varied from common sense interviewing techniques in untrained groups to nuanced approaches in the intervention physicians Outcome: • Intervention group had progressive improvements in clinical approach, knowledge, SC skills and spiritual self-care strategies • Decrease in skill-related barriers • Residents valued compassion shown to them, opportunities for spiritual self-care/reflection
Hemming et al. [36] 2016a	Intervention	Evaluate the need for, and the post-intervention outcome of a team-based curriculum for chaplain trainees and internal medicine residents working side-by-	34 IM residents, John Hopkins Bayview Medical Centre, USA	• 82% felt that addressing a patient's spirituality was an important part of patient care	• 21% of residents had knowledge of a spiritual assessment tool • 9% had used such a tool at least once • 85% (29 of 34) of residents reported having made at least 1 chaplain	Interprofessional curriculum to address gaps in spiritual knowledge and skills. Integration of a chaplain intern with 1 inpatient medical team during a 4 week rotation.

		side in the inpatient setting (Survey)			referral during their most recent month of inpatient service Barriers cited: • Lack of time • Uncertainty in approaching topic • Language differences	Outcome: • Rotations with chaplains received significantly higher ratings in residents' understanding of patients values and level of collaboration with chaplains • Needs assessment repeated the following year showed 36% absolute increase in those who reported being very comfortable in discussing a spiritual concern with a patient
Hemming et al. [37] 2016b	Intervention	Understand the benefits and challenges of learning together in an interprofessional curriculum that partnered internal medicine residents with chaplain interns in the clinical setting (Focus groups)	10 IM attending physicians, 10 chaplain interns, and 10 residents, John Hopkins Bayview Medical Centre, USA	–	–	An interprofessional curriculum for internal medicine residents and chaplain interns with the aim to improve medical resident's ability to provide care that is sensitive to spiritual needs and equip chaplain trainees to work with physician. Chaplain interns are paired with the medicine team 1 day per week for 4 consecutive weeks on the Aliki service. Focus groups conducted for physicians, interns, residents on interprofessional

						curriculum. Outcome: Increased awareness of effective communication skills
Doolittle and Windish [38] 2015	Observational	To determine the correlation of burnout syndrome with specific coping strategies, behaviors, and spiritual attitudes among interns in internal medicine, primary care, and internal medicine/pediatrics residency programs at two institutions (Established questionnaires)	44 IM medicine interns, 19 primary care, 4 IM residents, Yale University, USA	• 48.5% considered themselves to be spiritual • 1.5% considered themselves to be religious Correlation between spirituality (SIBS) and burnout domains • Those with higher total SIBS score as well as higher scores on the internal/fluid and existential/meditative domains of the instrument had a greater sense of accomplishment in their work • SIBS score had no association with the prevalence of emotional exhaustion or depersonalization on the MBI • External Ritual domain (church going etc.) was not significantly correlated with burnout	–	–

Awaad et al. [39] 2015	Intervention	Program evaluation study of a course on religion, spirituality, and psychiatry that deliberately takes a primarily process-oriented, clinically focused approach (Survey and qualitative feedback)	19 3rd and 4th year Psychiatry residents, Stanford university, USA	• Attitudes towards spirituality in psychiatry was initially positive • No significant change over time	–	A Process-Oriented, clinically focused approach to Teaching Religion and Spirituality in Psychiatry Residency Training Six 50-minute sessions. Brief didactics and case discussions facilitated by staff faculty. A panel of chaplains was invited for one session. Outcomes: • Significant improvement in competency of taking a spiritual history and understanding of DSM-IV diagnosis of SR problems • Significant improvement in incorporating spirituality in clinical practice
Roseman [40] 2014	Intervention	Describe a training program on SR and medicine (Qualitative feedback)	16 residents of various disciplines, Broward Health Medical Centre, University Hospital Florida University,	–	–	3 months of weekly meetings to increase awareness of spiritual and compassionate care in the medical encounter. Sessions included reflection and open discussion (“safe space”) about challenging patient encounters with guidance and tools for the

			USA			integration of spirituality and compassionate medicine into daily patient encounters. Outcomes: • The ability to share in a "safe" space allowed spiritual relationships to flourish • Participants indicated that the opportunity to talk about patient cases and share "real feelings" in small group settings was most meaningful
Ford et al. [41] 2014	Observational	Patient reports of the occurrence of RS communication and patient ratings of the quality of this communication, as well as its relationship to trainees' self-assessments of their competency in RS communication (Survey)	181 IM trainees and 541 patients with advanced medical illness under their care, USA	–	• Trainees' self-assessments of their skills in SR communication was positively associated with their patients' reports of the occurrence and ratings of SR communication	• Physician trainees rated their communication competence in discussing SR and existential issues lower than their competency in discussing medical decisions
Ledford et al. [42] 2014	Intervention	To evaluate the use of an educational innovation consisting of a teaching OSCE used as "sensitizing	28 staff and residents in FM residency, Fort Belvoir Community Hospital,	• 35.7% Protestant • 32.1% Catholic • 10.7% agnostic • 10.7% atheist	–	A teaching OSCE on SR followed by personal written reflection, dyadic guided reflection, and group reflection across three different time points

		practice," followed by personal, guided, and group reflection on SR (Analysis of qualitative data gathered from reflection activity)	Virginia, USA			where learners discussed the sensitizing practice, objectives and lessons learned. Outcome: • Residents showed progression along the stages of change with the target behavior being the physician's willingness to engage in mindful practice with patients who want to discuss SR
Doolittle et al. [43] 2013	Observational	Understand relationships between burnout, behaviors, emotional coping, and SR among internal medicine and internal medicine-pediatrics residents (Established questionnaires)	108 IM residents, Yale university, USA	• 40% considered themselves spiritual • 7% considered themselves religious • Spiritual well-being was positively correlated with personal accomplishment • Humility/personal application domain negatively associated with emotional exhaustion and depersonalization	–	–
Kattan and Talwar [63] 2013	Observational	Explore the attitudes, experiences, and comfort levels of psychiatry residents regarding SR in	45 Psychiatry residents, McGill University, Canada	• 37% Christian • 25.9% Jewish • 7.4% atheist • 3.7% Muslim • 25.9% others/unknown/none	• 71.1% agreed that spirituality is often cited by patients as related to their ability to cope with psychological distress • 75.6% agreed that	Prior training: • 38.6% had received training on spirituality • 81.3% of those who did found it beneficial • Qualitative data

		psychiatry, and examine residents' interest and past learning experiences in this area (Survey)		• 37.5% neither spiritual nor religious • 20% both spiritual and religious • 37% spiritual only • 5% religious only • 84.4% felt comfortable asking patients about their spirituality • 91.1% agreed it is appropriate to inquire about spirituality • 72.7% agreed that is important to address patients' spiritual problems or needs • 95.6% agreed that spiritual beliefs can help some patients cope with stressors • 80% agreed that that spiritual beliefs can contribute to or compound mental illness • 84.4% agreed that considering a patients' spirituality can improve treatment compliance and success • Uncertainty regarding the acceptability of self-disclosure and prayer • 24.4% had concerns regarding ethical	spiritual issues are often brought up by patients who are dying Barriers cited: • 80% insufficient time • 48.9% fear of offending patients • 48.9% insufficient knowledge/training • 31.1% general discomfort • 22.2% feared disapproval from other psychiatrists	reported that prior training "increased awareness" of the relationship between spirituality and mental health. Prior training helped increase their skills on sensitive questioning, "comfort approaching the topic" and in the "initiative to question" patients on it.

				implications of discussing spiritual issues with patients • 48.9% agreed that asking about spirituality can be too personal or offensive		
van Rensburg et al. [67] 2013	Observational	To establish how, within accepted professional boundaries, should SR be incorporated into the current model for South African practice and training (Qualitative analysis of interviews)	13 Psychiatrists from University of Witwatersrand, South Africa	–	–	Exploring, analyzing, and describing the views and experience of local academic psychiatrists on the topic of the role of spirituality in South Africa psychiatric practice and training. Training of spirituality in psychiatry emerged as one of the 6 main themes from the interview • All participants agreed that spirituality must be included in undergraduate medical and specialist psychiatric training • Suggested a mentorship vs. apprenticeship model • Core competencies are described
Campbell et al. [44] 2012	Intervention	Evaluate effectiveness of integrating SR into curriculum	Psychiatry residents, The University of South	–	–	Vertical curriculum on SR/ integrated into the general- and child-psychiatry training

		(Survey)	Carolina, USA			programs over the 12 month academic year. It included residents as teachers, didactics, case-conferences, and an interdisciplinary workshop. 80 quantitative voluntary responses collected from the curricular evaluation tools. Outcome: • 89% in the child program responded positively to the impact questionnaire • 81% in the general program responded positively to the impact questionnaire
Stuck et al. [45] 2012	Intervention	Evaluate effectiveness of an integrated psychiatry/seminary training model to enhance awareness and positive attitudes between disciplines (Survey and established questionnaires)	30 Psychiatry residents, University of South Carolina, USA Participated alongside 13 psychology interns and 41 seminary students	Seminary students: • 98% Protestant Psychiatry residents: • 59% Protestant • 16% Catholic • 7% other • 4.5% agnostic • 4.5% Hindu • 4.5% atheist • 2% Muslim Seminary students scored higher on the SWBS scale than residents Psychiatry residents	• 99% agreed that interventions of clergy and psychiatrist/psychologists should complement each other	Two 3-hour workshops involving psychiatry residents, psychology interns and seminary students to enhance awareness and positive attitudes between the disciplines. It included small group inter-disciplinary discussions, seminars, and a case presentation. Outcomes: • Psychiatry residents showed significant

				scored at the upper end of "moderate" for each of these scales • All participants had positive attitudes toward clergy		improvement in knowledge of clergy on a pilot scale • The global ratings for seminar evaluations were all "very good" to "outstanding" for both seminars. • 8/9 explicit goals of the program received "very good" to "outstanding" ratings.
Mogos et al. [46] 2011	Intervention	Evaluated the quality of spiritual care given in an ICU setting by those residents who followed a SR curriculum in comparison to those who did not have the curriculum in place (Survey)	Residents in GS, IM, Anaesthesia, University of South Carolina, USA	–	–	2-3 month curriculum that incorporates ethics and spiritual care for third year residents' rotating through the ICU. It consists of lectures, discussions, case reports, research articles, hands on and bedside training, core beliefs of various religions and spiritual practices. Outcomes: • IM and GS residents did not have a curriculum for spirituality/end of life care whereas Anesthesia did • Residents were evaluated by 30 ICU nurses using a Likert scale across 40 questions.

						• Those who followed the spiritual curriculum were able to provide better total care when compared with those residents who did not have the same spiritual training
Kozak et al. [47] 2010	Intervention	Describe the development and use of a curriculum on Religion, Spirituality and Culture in Psychiatry (Evaluation forms)	Psychiatry residents, University of Washington Psychiatry residency, USA	–	–	Curriculum over 4-year residency programme. Included didactics, rotation experiences, grand round presentations, case conferences and field experiences • Core objectives and curriculum structure are described Outcomes: • Enhanced ability to understand different cultural and spiritual perspectives • Increased comfort level in assessing SR backgrounds of their patients
Saguil et al. [48] 2011b	Observational	Compared the influence of SR research with the influence of more traditional evidence, such as that associated with pharmaceutical or	363 FM residents, USA	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS	• 96.4% were willing to discuss spirituality if asked by a patient • Spiritual wellbeing, religious affiliation and race were significantly predictive of willingness	Prior education: • 41.6% in residency • 58.7% in medical school Prior training did not influence agreement to either statement (evidence

		medical device therapy, and its ability to influence FM residents to discuss spirituality with patients (Survey and established questionnaires)		score was 97.2, a score comparable with that of many Protestant religious groups • Residents indicated that they would be more responsive to publications on traditional medical therapies than SR-related therapies • 93.9% agreed that they would be more willing to initiate SR discussions if presented with good evidence	to broach spirituality	on spirituality vs. evidence on a new medication)
Saguil et al. [49] 2011a	Observational	Explore willingness of the new generation of family physicians to discuss SR with their patients and the determinants making them more or less willing to do so (Established questionnaires)	363 FM residents, USA	• 25.6% Catholic • 32.8% Protestant • 14.0% other denominations of Christianity • 26.2% non-Christian • The average SWBS score was 97.2, a score comparable with that of many protestant religious groups	• Denominational preference , self-rated spirituality, and spirituality instruction were significantly associated with strong agreement to discuss spirituality upon patient request • 59.8% strongly agreed, 19.8% moderately agreed, 16.8% agreed that they are willing to discuss spirituality upon patient request	Prior training: • 61.7% in medical school • 43.8% in residency Significant association between prior training and increased agreement to discuss SR upon patient request
Anandarajah et al. [50]	Qualitative	Describe how physicians sought to improve the rigor	Expert panel of 8 focusing on dual	–	–	To achieve consensus regarding spiritual care competencies tailored for

2010		of education in the field of SR though a systematic process that provided a competency-based framework for curricula development and evaluation (Modified Delphi process, external feedback)	discipline of FM and spiritual health, USA			family medicine residency training Outcomes: • 19 spiritual core competencies identified for training (6 on knowledge, 9 on skills, 4 on attitudes) that were linked to the competencies in the ACGME • 3 global competencies related to the dimension of context, patient-care and self-care identified for use in promotion and graduation criteria
Galanter et al. [51] 2011	Intervention	Describe the development of a medical-training program that integrated the role of SR into a regimen of biomedical education (Established questionnaires and qualitative analysis)	Psychiatry residents, patients, and chaplain trainees, Bellevue Medical Center, USA	• Medical trainees were less spiritual than both patients and chaplain trainees using a spirituality self-rating scale	–	Weekly spirituality group meetings open to patients. Led by psychiatry residents in rotation and spiritual teaching faculty. Patients were encouraged to discuss their own experience of spirituality and how it relates to their coping of the illness. Video recordings of their answers on why spirituality is important in their life were employed in classes for residents. Residents also received a seminar series on cultural competency Outcomes:

						• Third year residents gave the course high ratings relative to other trainings
Grabovac et al. [64] 2008	Intervention	Evaluate pilot study of a course on SR to increase both residents' understanding of clinically relevant SR issues and their comfort in addressing these issues in their clinical work (Survey and qualitative feedback)	Psychiatry residents, University of British Columbia, Canada	–	–	6-hour SR course over six sessions. Involved both didactics and case-based discussions. Outcomes: • Significant increased comfort with spiritual issues in clinical practice • Several residents were hostile toward the introduction of the course into the curriculum, reflecting the transference of personal attitudes toward spirituality to the professional context
Anandarajah and Mitchell [52] 2007	Intervention	Describe a 17-hour elective designed to improve learners' knowledge and skills regarding spirituality and patient care, and assessed learners pre- and post-intervention (Survey)	10 M4s in for the first 2 years and 8 M4s and 15 residents, faculty and staff, Brown Medical School, USA	–	–	Spirituality and medicine elective with eight 2.5-hour sessions over 4 weeks designed to improve learners' knowledge and skills regarding spirituality and patient care Outcomes: • Improvement in SR knowledge and skills

Yi et al. [53] 2007	Observational	To determine the level of self-reported health among resident physicians and to ascertain factors that are associated with their reported health, including SR (Established questionnaires)	IM, PED, IMPED, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 73% Christian • 7% Jewish • 11% other • FACIT-SP-Ex for spiritual well-being was 71.5 (0-92). • Duke religion index showed moderated organized, nonorganized and intrinsic religiosity • Self-rated overall health rating scale (0-100) was used with a mean of 87 • Lower health rating scores were associated with poorer spiritual well-being • Religion and religiosity variables were not associated with self-rated overall health	–	–
Kligler et al. [54] 2007	Intervention	Describes efforts to develop and test a set of measurement tools to assess competencies for integrative medicine that takes into account SR issues at the residency level (Scores using evaluation tools, OSCE results)	FM residents across 6 different hospitals, USA	–	Spirituality not often discussed with patients by integrative family medicine participants	Core FM program competencies are described. Tested a set of competency-based evaluation tools in integrative history taking and planning. Direct observation, written treatment plan and 2 OSCES were evaluated.

Marr et al. [55] 2007	Observational	Surveyed palliative medicine fellowship directors in the United States to learn how they teach SR, who does the teaching, and what they teach (Survey)	14 US Palliative Medicine fellowship directors	–	–	• All program directors had taught SR as part of curriculum • 12 had separate programs for teaching spirituality • 2 reported they taught spirituality but not as a distinct, separate program • Most Palliative Medicine programs agree on the content of training on spirituality, but no robust educational and evaluation methods in place • Common formats for education included small group discussion, lecture, self-study, supervision, shadowing a chaplain • No experiential (role-play etc.) education methods or evaluation
Barnett and Fortin [56] 2006	Intervention	Pre- and post-evaluation of a pilot workshop on spirituality and medicine (Survey)	79 M2s and 58 IM residents, Yale University SOM, USA	–	–	Workshop included lectures, discussion, role-play to meet objectives. Outcomes: • All participants had significantly increased scores regarding the 1) the appropriateness of inquiring about spiritual

						and religious beliefs in the medical encounter, 2) perceived competence in taking a spiritual history, 3) perceived knowledge of available pastoral care resources • Participants appreciated the opportunity to discuss and reflect upon this subject in a safe space • Common questions remaining for learners after the workshop is whether it is the physician's role to ask about spirituality, and for which patient's is it appropriate.
Yi et al. [57] 2006	Observational	Determine the prevalence of depressive symptoms in pediatric, IM, FM, and combined internal medicine-pediatric residents, and SR factors that are associated with prevalence of depressive symptoms (Survey, established questionnaires)	227 Paediatric, IM, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 73% Christian • 7% Jewish • 11% other • 10% no religious affiliation • 25% met the criteria for having significant depressive symptoms • Significant depressive symptoms were associated with poorer religious coping, greater spiritual support seeking, and worse spiritual well-being	–	–

King and Crisp [15] 2005	Observational	To determine the extent and nature of teaching on SR and health being taught in family medicine residency programs, identify perceived facilitators and barriers to SR education, and determine preferred methods of curriculum dissemination (Survey)	101 FM residencies regarding their spirituality and health care curriculum, USA	–	–	• 92% of program directors said spirituality teaching was important • Only 31% of programs have a specific curriculum • 86% reported using the current AAFP core educational guidelines Facilitating factors: • Having trained personnel (39%) • Positive attitudes toward SR (39%) Barriers cited: • Lack of time (52%) • Lack of qualified personnel (31%) • Fear/discomfort about SR (32%) • Lack of priority (14%) • Lack of available personnel (12%) Teaching methods: • 67% used lectures • 49% used clinical precepting • 44% used inpatient rounds • 25% chaplain rounds • 18% seminars

Luckhaupt et al. [58] 2005	Observational	To assess primary care residents' beliefs regarding the role of SR in the clinical encounter with patients (Survey)	247 IM, Paediatric, FM residents, University of Cincinnati and Cincinnati Children's Hospital Medical Centers, USA	• 46% Protestant • 26% Catholic • 7% Jewish • 11% other • 10% no religious affiliation • 90% believed that they should be aware of their patient's SR beliefs • 46% felt that they should play a role in patients' spiritual or religious lives • 36% felt that they should ask patients about SR during office visits • 77% felt they should ask if a patient was near death • FM residents were more likely to agree with asking about patients' SR beliefs • Residents were less likely to agree with praying silently/aloud with patients than to inquire about beliefs • Residents who felt that they should play a role in patients' spiritual or religious lives participated in organized religious activity with greater	Advocating for SR involvement was associated with FM residency, spiritual well-being, positive religious coping and PGY year	–

				frequency, or had higher level of personal spirituality		
Grabovac and Ganesan [65] 2003	Observational	To determine the extent of currently available training in RS as they pertain to psychiatry (Survey)	14 Psychiatry residency programs in Canada	–	–	A survey of training currently available to Canadian residents in Psychiatry • 4 had no formal training in SR • 4 had mandatory academic lectures that provide between 1-4 hours of teaching • 9 programs offered some degree of elective, case-based supervision
Armbruster et al. [4] 2003	Observational	Identify pediatrician (faculty and resident) beliefs about SR in medicine and the relationship of those beliefs to SR behavior and experiences in clinical practice (Survey)	56 residents in Paediatrics, SSM Cardinal Glennon Children's Hospital, Saint Louis University SOM, USA	Resident religious affiliation • 85.7% Christian • 5.7% Jewish • 2.9% Muslim • 2.9% Hindu • 2.9% no religion • 90.9% of residents agreed that patient religious beliefs positively affected health • 56.8% of residents agreed that religious involvement reduced patient morbidity and mortality	• 6.8% would routinely inquire about the religious affiliation of the patient during new visits • 72% of residents would routinely inquire about the religious affiliation of the patient during health crisis or life-threatening illness Barriers cited: • Lack of time (30%) • Personal discomfort (31.8%) • Lack of training (32.6%) Facilitating factors: • Not expecting negative	• 32.6% of residents agreed that they are not adequately trained to address SR issues Facilitating factors: • Feeling capable inquiring about SR • Appropriate training with correction of misperceptions about SR in practice

				• 65% of residents agreed that religious inquiry can enhance the therapeutic relationship • 43.2% of residents agreed that they should proactively acknowledge and support patients in their existing beliefs • 50% of residents disagreed that religious issues are the province of pastoral care, not the physician • 67.4% of residents agreed that offering to pray with patients was appropriate. • 52.3% of residents disagreed that patients/families would resent unsolicited questioning about SR	patient reactions to SR inquiry and prayer • Strong belief that SR is relevant to paediatric outcomes	
Siegel et al. [59] 2002	Observational	To characterize pediatricians' attitudes toward SR in relationship to the practice of pediatrics (Survey)	65 residents in Paediatrics, Boston Medical Centre, USA	SR orientation: • 46% "not at all" or "not very strong" • 33% "somewhat strong" • 21% "strong" • 90% stated they thought it was appropriate to pray with a patient • 76% reported feeling comfortable praying with a patient if asked to do so	Strong personal SR orientation was significantly associated with positive attitudes to SR in general but was not related to reported practices • 19% say they do initiate SR discussions in clinical practice • <40% would ask SR for routine health maintenance visits	–

				• 35% stated they should initiate discussions of SR • 65% of pediatricians felt that faith plays a role in healing • 64% reported that clinician patient interaction would be strengthened by discussions of SR	• 93% would ask SR if discussing life threatening illness • 96% would ask SR when discussing death and dying independent	
Saba [60] 1999	Observational	To foster a better understanding of beliefs and values that residents bring to their clinical practice (Qualitative analysis)	143 FM residents, University of California, San Francisco, USA	• Philosophical or spiritual frameworks were central to how residents viewed human existence, health and illness, and their role as a physician, and meaning to uncertain/painful events in their work • 63% described their beliefs/values to reflect formal philosophical or religious traditions • 85% explained that their desire to become a physician was rooted in a sense of mission or calling	–	–
Oyama and Koenig [61] 1998	Observational	To determine whether the religious beliefs and behaviors of family medicine outpatients differed from those of their	31 FM faculty and residents, North Carolina and Texas, USA	–	Religious backgrounds, beliefs and behaviors of physicians and residents were different from patients. They may not realize the importance of	–

		physicians and whether patients' religiousness affects their expectations of their physicians regarding religious matters (Survey)			religion to patients or the need to address these issues.	
Waldfogel et al. [62] 1998	Observational	Explore RS beliefs of psychiatry residents and the didactic and supervision experience of the residents regarding RS issues (Survey)	121 Psychiatry residents, various US Universities	• 29% Catholics • 28.9% Protestant • 12% Jewish • 14% other • 77% believed in God • 68% reported that religion is important in their lives • 74% believed that religion can help solve personal problems • 49% prayed weekly • 22% attended religious services weekly • 49% reported their religious beliefs affected their choice of medicine • Residents' religious affiliations was significantly related to their choice of medicine as a career • 84% felt "somewhat to	• 25% reported weekly encounters with patients with clinically significant SR issues • 86% rarely discussed own religious beliefs with patients	Prior training: • 27% reported that religion was discussed during didactic training as a resident • 39% of PGY3 to PGY5 reported that religion was discussed during supervision Facilitating factors: • Having exposure to SR through didactics or supervision was significantly associated with feeling competent to address SR issues, and feeling that SR is important in the clinical setting

				very competent" in their ability to recognize and attend to a patient's SR issues • 9% agreed that it is acceptable to pray with patients • 12% believed that it was acceptable to reveal their religious convictions in a clinical setting • 41% agree that religion is important in the clinical setting		
Sansone et al. [14] 1990	Observational	Explore the effects of religious ideation on the administrative and educational aspects of training programs, and the current pedagogical approach to religion in psychiatry education. (Survey)	276 Program Directors in Psychiatry, USA	–	–	• 68.1% rarely or never had a course on any aspect of religion • Didactic instruction on any aspect of religion was infrequent • Clinical supervision on SR more likely to occur than didactic instruction

Abbreviations: AAFP = American Academy of Family Physicians, ACGME = Accreditation Council for Graduate Medical Education, ADSAs = Medical School Associate Deans for Student Affairs (ADSAs), CME = Continuing Medical Education, FACIT-SP-Ex = Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being, Expanded version, FM = Family Medicine, GME = Graduate Medical Education, GS = General Surgery, ICU = Intensive Care Unit, IFM = Integrative Family Medicine, IM = Internal Medicine, IMPED = Combined Internal Medicine Pediatric, MBI = Maslach Burnout Inventory, PED = Pediatrics, PGY = Post-Graduate Year, SR = Spirituality and Religion, SC = Spiritual Care, SIBS = Hatch Spiritual Involvement and Belief Scales, SOM = School Of Medicine, SWBS = Spiritual Well-being Scale, UME = Undergraduate Medical Education

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HHEC provided substantial contribution to the acquisition of the data, interpretation of the data, drafting of the paper and revising the draft, and gave approval for the version to be submitted. KS and QHC povided substantial contributions to the conception and design of the study, acquisition of data, interpretation of the data, revising of the draft critically for important intellectual content and provided final approval of the version to be submitted.

Figure legend: Figure 1. PRISMA flowchart of reviewed studies related to spirituality and religion (SR) in residency

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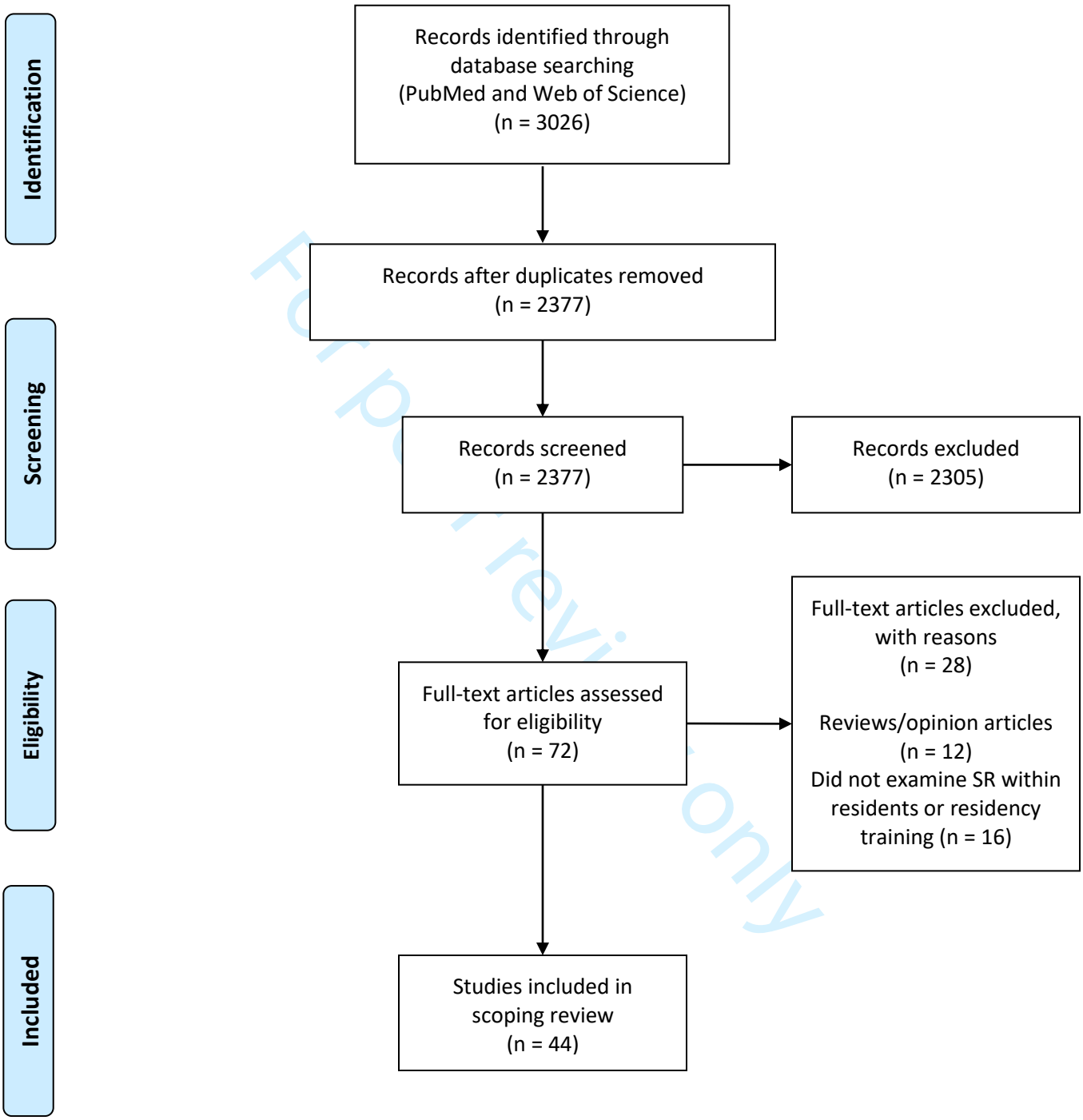

Figure 1. PRISMA flowchart of reviewed studies related to spirituality and religion (SR) in residency

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

1Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2-3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	-
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6-7
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6-7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	7
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	-

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	8, Fig. 1
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	8
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	-
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	8-15
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-15, Table 1
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Table 1, 15-16
Limitations	20	Discuss the limitations of the scoping review process.	18-19
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	19
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	53

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.